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MQP Opportunities with Innovative Startup Companies

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MQP Opportunities with Innovative Startup Companies

AN INTERACTIVE QUALIFYING PROJECT REPORT
SUBMITTED TO THE FACULTY
OF THE
WORCESTER POLYTECHNIC INSTITUTE
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF BACHELOR OF SCIENCE

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Abstract

Currently, students at Worcester Polytechnic Institute (WPI) have no formal process for completing their Major Qualifying Projects (MQPs) with small startup companies. The students that want to work with startups generally have to plan their own MQPs and appeal to an advisor for help before they even start the project. Hence, this Interactive Qualifying Project (IQP) investigated and recommended a process for this. We created more streamlined methods of facilitating student led projects with innovative startup companies, helping WPI students to get a sense of new venture creation and growth.

Introduction

Students at Worcester Polytechnic Institute (WPI) have no formal process for completing their Major Qualifying Projects (MQP) with small startup companies. Generally, students have to plan their own MQPs and appeal to an advisor for help before they even start the project. Due to this, WPI's School of Business decided to initiate three simultaneous Interactive Qualifying Projects with one primary objective - to make more startup company sponsored MQPs available for WPI students. Specifically, our team created a recommendation and implementation strategy outlining streamlined methods for establishing student led projects. We expect our recommendations to enable more opportunities with startup companies, which will help WPI students to get a sense of new venture creation and growth. At the end of this project, we presented a final report detailing what we conclude to be the best course of action for the stakeholders at WPI.

Discussion

In order to prepare our recommendations, we investigated several methods for establishing lasting and sustainable relationships with startup companies. We decided to utilize a startup accelerator – an organization that supports startups with funding, mentoring, training and events for a period of time. We primarily used a Startup Accelerator called MassChallenge to get a feel for how startup accelerators function, what they are capable of, and what we can expect out of a startup company. Additionally, we investigated methods for: 1) finding and selecting suitable startup companies, project advisors, and students, 2) utilizing existing campus resources, and 3) handling the necessary paperwork associated with contracting and project creation. Before starting our investigation on both MassChallenge and WPI's MQP process, we conducted background research. This helped us improve our understanding of how startup companies approach startup accelerators, like MassChallenge, and how MQPs are initiated at WPI. While researching MassChallenge, we saw how the startups functioned in an entrepreneurial sense; this helped us reach out to startup companies in a way they understood and benefited from. We were also able to work with Semaphores, a health sciences startup company, and acquired a knowledge base of their industry. We also researched other Universities who have setup programs and projects with startup companies. This allowed us to improve on existing ideas and avoid pitfalls. We also briefly researched the core principles of entrepreneurship, as a way to have a solid understanding of how successful companies are run, how we should have run our venture in order to obtain success, and how to maintain ethics.

After completing our background research, we began working with WPI, MassChallenge, and the startup companies met through MassChallenge to create a recommendation that met the requirements of all three groups. The bulk of our team's efforts were spent on designing and re-designing a system that works through MassChallenge to grab the attention of the startups, evaluate the startup companies, and then match the startup companies with students once they fulfilled the evaluation criteria. These evaluation criteria were the quintessence of this project's outcome.

IQP Learning Outcomes

In October 2006, the WPI Faculty set and approved eight IQP learning outcomes for all WPI students. These eight items were set in order to provide project advisors and project teams guidelines by which their performance can be assessed. Our team met all of the faculty approved learning outcomes through this project experience; we documented how we met them in the Conclusion and justification section within this report. The eight faculty approved learning outcomes are listed below with references to the sections where they are addressed. For additional information see Chapter 5: Conclusions.

Learning Outcomes:

1. Demonstrate an understanding of the project's technical, social and humanistic context.

How:

Solicited our project's technical, social, and humanistic requirements by conducting several interviews with our project advisor, the startup companies we've interacted with, and WPI's staff within the Office of Corporate Engagement

Demonstrated in:

Introduction, Discussion, and Chapter 1: Literature Review

2. Define clear, achievable goals and objectives for the project.

How:

Defined achievable goals and objectives for our project by coming together as a team, reviewing materials on S.M.A.R.T goals, and discussing what we wanted to accomplish.

Demonstrated in:

Chapter 4: Recommendation and Appendix A: Consultant's Report – Goals and Objectives

3. Critically identify, utilize, and properly cite information sources, and integrate information from multiple sources to identify appropriate approaches to addressing the project goals.

How:

With the help of our project advisor we identified, utilized, properly cited information, and integrated information from multiple sources to address our project goals. We identified the

appropriate resources to review, by interviewing our project advisor and by researching various items on the fly as our project progressed

Demonstrated in:

Chapter 1: Literature Review and Appendix D: References

4. Select and implement a sound approach to solving an interdisciplinary problem.

How:

Created a recommended approach for soliciting startup and entrepreneurial firms

Demonstrated in:

Chapter 4: Recommendation and Appendix A: Consultant's Report

5. Analyze and synthesize results from social, ethical, humanistic, technical or other perspectives, as appropriate.

How:

We then analyzed and synthesized the results from our methodology using a technical and social perspective and presented our findings to the Vice Provost of Innovation and Entrepreneurship and the Office of Corporate Engagement.

Demonstrated in:

Chapter 3: Findings, Chapter 4: Recommendations, and Appendix A: Consultant's Report

6. Demonstrate the ability to write clearly, critically and persuasively.

How:

Wrote and submitted a project report to our project advisor and WPI

Demonstrated in:

The entire report

7. Demonstrate strong oral communication skills, using appropriate effective visual aids.

How:

Presented our recommendations and conclusions to the Office of Corporate Engagement Staff and the Vice Provost of Innovation and Entrepreneurship using a PowerPoint presentation.

Demonstrated in:

Chapter 2: Methodology – Meeting with MassChallenge, Chapter 2: Methodology – Communication with Semaphores and Rifiniti, and Chapter 2: Methodology – Office of Corporate Engagement

8. Demonstrate an awareness of the ethical dimensions of their project work.

How:

Reviewed and discussed the importance of giving truthful and complete information to the Startup Companies and Entrepreneurial firms we worked with.

Demonstrated in:

Chapter 5: Conclusion, Chapter 2: Methodology – Communication with Semaphores and Rifiniti

Chapter 1: Literature Review

The scope of this chapter is to demonstrate our knowledge of and to provide background on the four major bodies of knowledge that were essential to the completion of this project. Below are the details on the current MQP process, effective communication strategies, implementation strategies, and details on how other colleges and universities have formed strategic partnerships with sponsoring companies.

Section 1: WPI's Major Qualifying Project Process

A Major Qualifying Project, or MQP, is part of the WPI-characteristic project system. An MQP is a project in the students' major fields of study and is focused on the integration of all past study to give solutions to real-world problems, with high-quality communication and professional presentation of results. Since the inception of Major Qualifying Projects in the early 1970s (Bert, et al., *Ten Lives Changed*, 1996), the vision laid out by the founders of "the WPI Plan" has been maintained (Bert, et al., *A Planning Program for Worcester Polytechnic Institute: The Future of*

Two Towers - Part Four: A Plan, 1996). MQPs are still chosen in consultation with the students' academic advisors and must be accepted by project advisors in order to complete the project registration. Additionally, off-campus sponsors bring interesting yet challenging projects that enable students to gain industry connection, job seeking skills, professional experience, etc. per the vision and guidelines setup by the founders.

Proposing an MQP to WPI

Although organizations present a wide spectrum of topics as proposed projects, two significant requirements affect WPI's capacity to respond: the project must meet the educational objectives of WPI and the project topic must fall within the area of interest of individual faculty. In addition to the two requirements above, prospective MQP sponsors must have the ability to maintain the financial responsibilities listed in the "Financial Requirements" section below. Special exceptions to the financial requirements can be made under the discretion of the Executive Director of the office of Corporate Engagement. This office also provides proposal forms, a suggested format for a legal agreement, and a person to contact.

General WPI Requirements

In order to sponsor an MQP, the project described to the advisor, to the department's MQP coordinator, or to the Office of Corporate Engagement has to follow the guidelines set forth by WPI (which can be found on WPI's MQP website). Generally, MQP projects have to be in the students' major area of study (Worcester Polytechnic Institute, 2010) in addition to:

- ⌚ Allowing the application of the skills, methods, and knowledge of the students' discipline to solve a problem representative of the type to be encountered at a professional level.
- ⌚ Encompassing research, development and application.
- ⌚ Involving analysis or synthesis, being experimental or theoretical, and emphasizing a particular concentration in the major.
- ⌚ Being a capstone design experience.
- ⌚ Being administered by the WPI Office of Corporate Engagement, and overseen by WPI faculty members who participate as project advisors.

Additional Project Sponsor Requirements

In addition to the general MQP requirements, project sponsors also have several other responsibilities when completing a project with WPI. Below are a few of the requirements that can be found on WPI's MQP website.

- ⌚ Prospective companies must provide a Project Liaison to guide the students and the faculty advisor on the project (the usual commitment is a weekly meeting of an hour or so).
- ⌚ Companies must give direct financial support for all cost incurred (mailing, copying, information searches, local travel, supplies, or any other expenses authorized by the sponsor to conduct the project) through a reimbursement process administered by WPI. This is a standard fee charged in most cases, however special exceptions can be made with the office of Corporate Engagement.
- ⌚ Co-op or permanent entry-level job placements can result from project activity, but must be a separate time from project activity. If a parallel arrangement of compensated work and separate project work is desired, an agreement will be proposed to detail this arrangement.

- ⌚ Work space (if needed) should also be provided to the students. This would allow them to establish files and have access to a telephone, clerical support, and a personal computer (if needed).

Financial Requirements

Companies sponsoring MQPs must make payment to WPI in order to sponsor an MQP. It is negotiated by the Faculty Advisor and/or Projects Office with the sponsor's Logistics Liaison, to help defray WPI's costs of operating the WPI Project Program, and to fund development activities. For details about how WPI distributes project fees internally, contact the office of Corporate Engagement. For the current contact from this department please navigate to www.wpi.edu/corporations/projects.html.

Section 2: Implementation Strategies

For part this of the literature review, we researched the implementation and realization process of a system change. The text we reviewed, *System Analysis and Design*, by Alan Dennis, Barbara Haley Wixom, and Roberta M. Roth, was designed for the transfer of an Information Science type system, such as a database, but we were able to adapt the core ideas and thoughts to our analog process. After reading, it became apparent that we needed to define our system goals, and analyze our system from the point of each type of end user. Doing so revealed a lot of information, and helped us to find where the system could possibly get caught on a hitch.

A good deal of the text on implementation was spent on describing testing methods and the importance of them. However, there were some unnecessary tests because we were designing a system exclusively for the WPI MQP application process. One such example was the acceptance test, which is a test done by the end users. It is designed to make sure the new system meets all the needs and to confirm that the system is complete (Systems, p. 456). In hindsight, we were able to completely design the system and meet most of the end user requirements because of the material in this text. Another test that proved to be obsolete because we were able to design specifically for this need was the system test. This test is one to be conducted by a systems analyst and should evaluate how well the system as a whole meets the requirements it was implemented to satisfy (Systems, p. 454). This left us with two viable tests for our system, unit testing and integration testing. Unit testing focuses on how well each individual part of the system works, and integration testing focuses on testing how well all the parts of the system work together (Systems, p. 454).

Another specific focus of the implementation section was the strategy of implementation. Many options exist, but direct implementation proved to be the best for us. Direct implementation is when the old system is stopped cold turkey, and the new system is started right in its place. Direct implementation, compared to the other styles, is low cost, fast, and high risk. The risk involved with direct implementation lies in the cost of potential oversights. Without the old system running concurrently like a parallel implementation, any oversights that lead to bugs and hang-ups, cannot be resolved quickly and could have sufficient costs (Systems, p. 477). However, once again, the benefit of designing a system for a single exclusive use significantly minimized that risk because

our designs were specific enough to vastly decrease any oversights, and comparatively, our system logically has fewer oversights than the old one. Since much of the risk was mitigated, direct implementation was an easy choice for implementing our system.

Section 3: Sample Consultant report.

Considering that the final deliverable in this project was a consultant report, we decided that another valuable resource to review would be a sample consultant report. Upon searching for consultant reports, we quickly came upon a PDF written by Tim Catalano, of Marietta College in Ohio, which he uses in the teaching of his class Management 451 - Business Consulting. This sample report details many important sections of a standard consultant report and explains them each in depth.

The first section this report details is the cover page. Catalano notes that the cover page should be printed on cover stock, to help protect the latter pages of the report, and should contain all the information necessary to store and file the report adequately. This information includes the team members, final submission date, company name, and any other information that is pertinent to filing the report (Catalano p. 1).

The next part is a short disclaimer page that is used so the consultants can disclaim any liability of the company, should the company use the information in the consultant report (Catalano p. 1).

After the disclaimer page, there is a title page, which expands upon the cover page, and should, in conjunction with the cover page, provide an introduction to the consultant report. This includes a detailed title of the report, the organization which the report is for, the organization the authors are working within (if applicable), the authors names, and the authors contact information (Catalano p. 1).

Next comes the table of contents, which, Catalano says, should serve three purposes. First, it should help a reader who only wants to read a specific section locate that section. Second, it should give a reader a brief overview of the sections to come. Lastly, the table of contents should serve as an outlining tool for the writer(s) who may be writing the report (Catalano p. 1).

After the table of contents is the executive summary. The executive summary is meant for someone who does not intend to read the entire consultant's report. It is designed to be read by someone who is going to briefly look

over only this section and make a decision on whether to pursue more into the report or pass it up (Catalano p. 2).

The next part detailed by Catalano is the introduction to the report. He breaks the introduction down into seven bullet points (Catalano p. 2).

- ⌚ What is the problem or opportunity?
- ⌚ What is the purpose of this proposal?
- ⌚ What is the background of the problem or opportunity?
- ⌚ What are your sources of information?
- ⌚ What is the scope of your proposal?
- ⌚ How is the proposal organized?
- ⌚ What are the key terms used in the proposal?

Then comes the background section of the report. This section should detail any research that was done prior to the report about the firm, the market, etc. Catalano breaks the background section up into six sub-sections (Catalano p. 3).

- ⌚ Client Profile.
- ⌚ Nature and history of the firm.
- ⌚ The firm today.
- ⌚ The business and market environment.
- ⌚ The competition.
- ⌚ Defining the firm's objectives.

Catalano then suggests a section devoted to defining the consultant's objectives. This should be chronologically organized, and should be able to serve as a 'to-do' list for the team of consultants. Flowing nicely after the consultant's objectives section is a section that is titled 'Carrying out the teams tasks'. This should reference all of the points in the above section and detail how they were completed, or why they were not completed (Catalano p. 5).

Finally, Catalano suggests a conclusion section, a bibliography of all works used, cited and referenced, an

appendix, and a section devoted to any accompanying visuals for the report. The conclusion, bibliography and visuals section are all fairly self-explanatory, but the appendix should contain any additional information not extremely necessary to the report, but can serve to bolster a point, or clear up a confusing section (Catalano p. 7).

Section 4: Communication

The Need for Communication Skills

Our goal of this IQP is to implement a system that would lead to the creation of more startup company sponsored MQPs. Early on in this project, we foresaw the need for business communication skills in order to effectively communicate our objectives and gain the support of others for our proposed system. For these skills, we turned to the books Crucial Conversations and Improve Your Business Communication. Together these books covered important and relevant communication points like speaking persuasively, causing action, getting results, and writing emails and reports.

How to Speak Persuasively

There are two main qualities needed for effective communication. First is confidence, being able to say what needs to be said to the person who needs to hear it. Second is humility, being able to listen to others and take their responses into consideration. In order to have a productive conversation with someone else, a good balance of confidence and humility is needed. (Patterson, Grenny, McMillan, & Switzer, 2011, p. 133)

Sometimes, conversation is used to persuade people. In this case, start with the facts and then go to conclusions. Facts are solid pieces of evidence that people can agree on. Conclusions are not always agreeable, so a conclusion should be preceded by facts and an explanation of what thoughts lead to the conclusion. (Patterson, Grenny, McMillan, & Switzer, 2011, p. 136)

When talking to people, it is important to talk tentatively. Do not treat a conclusion as fact and likewise, don't pretend that it is not important. Give the conclusion significance while keeping the floor open to discussion. Phrases like "In my opinion..." and "I'm starting to feel that..." state a conclusion while mentioning that it is not

fact and that a response is expected. When a response is expected, extra effort must sometimes be given to get a response. People might feel shy about stating their opinions, so it is important to openly and clearly invite a response. Sometimes, the role of devil's advocate must be played in order to get a discussion going. Asking for a response and even encouraging it is important because it is a good way to get all the facts from everyone about a subject, thus adding the collective knowledge pool. (Patterson, Grenny, McMillan, & Switzer, 2011, p. 143)

How to Cause Action and Get Results

A lot of talking can do great good but goes nowhere if the discussions are not acted upon. Sometimes people will just do nothing, expecting someone else to take the initiative. In order to prevent these types of situations, decisions have to be made. Before decisions are made, people have to decide how the decisions will be made. A good time to decide how the decision will be made is during the conversation. (Patterson, Grenny, McMillan, & Switzer, 2011, p. 179)

When it comes to deciding how to make a decision, there are four main options. The first option is command. Someone holds a leadership role or is entrusted to make the decision on behalf of everyone else. The second option is consult. One person still makes the final decision, but this person will talk to others and gather ideas before making the final decision. Third is vote. Usually, the vote is called when there are a few good ideas and people are generally okay with any of the ideas present. The vote just speeds up the process by everyone voting for the idea they agree with most and the decision being the idea that gets the most votes. Lastly is the consensus. To decide on a consensus, everyone continues to talk and discuss until everyone present agrees with one option. This approach takes a long time, but is great for high stake issues where complete support is necessary. (Patterson, Grenny, McMillan, & Switzer, 2011, p. 180)

In order to put decisions into action, assignments have to be made. When it comes to assignments, it is important to select who will be responsible for it. Assigning people responsibilities ensures that they do not all assume that someone else is doing the work and do nothing. After deciding who takes the lead on an assignment, it is very important to be as specific as possible when explaining the desired results. The clearer the details, the more likely the deliverable from the assignment will be exactly what is desired. In addition to details, it is very

important to assign a deadline to go with each assignment. Saying it will be due “someday soon” will lead to the assignment being put on the bottom of the priority list and eventually forgotten. After all the details are worked out, a system for following up must be set in place. It could be anything from a weekly meeting to an email when the project is done. As long as there is some follow up, the person doing the project feels accountable for how the project goes and will be more motivated to get it done and do the assignment well. (Patterson, Grenny, McMillan, & Switzer, 2011, p. 183)

Improve Your Business Communication

General Writing Tips

Writing in the business world is not like English class. The best pieces of writing are clear, short, interesting, and easy to read out loud. One way to test if something is written well is by reading it out loud. Does it sound like something someone would say or does it sound artificial and wordy? (Patterson, Grenny, McMillan, & Switzer, 2011, p. 6)

Planning out messages is important. In today’s age, everything can go viral and spread to anyone. On top of that, emails are seldom truly deleted. They are always around somewhere, so it is important to get it right the first time. (Patterson, Grenny, McMillan, & Switzer, 2011, p. 86)

Some important steps for planning are to identify the goal, think about the audience, determine tone and format, and map content. The most important step is to identify the goal. Every piece of writing in the business world has a goal. When writing something in the business world, it is important to keep the goal of the writing in mind and write towards that goal. Another good thing to do is to state the goal in a message upfront at the beginning of any piece of writing. This helps the writing get straight to the point and makes it easier to read; the person reading this message does not have to search around for the point. It’s right there on top. (Patterson, Grenny, McMillan, & Switzer, 2011, p. 14)

Email Typing Tips

Emails are a very fast way to communicate within businesses. They may seem quick and simple but a boss could easily forward an email all over the place. Keeping this in mind, every email should be written carefully. The practices above still apply. Take time to structure the email, plan out goals, and always lead with the point of the message. In addition to starting with the point of the message, the title of the email should be something that is strong, concise, direct, and self-explanatory. Good subject lines are very important because they are often the difference between being read and being deleted. When it comes to the body of an email, stick to one subject. Multi-subject emails can be confusing. If more than one question is being asked in one email, the response may not address all the questions. By sticking to one subject, the email is easier to read and understand. (Patterson, Grenny, McMillan, & Switzer, 2011, p. 94)

Report Writing Tips

Reports are important ways to communicate in the business world, but what makes a good report? A good report is one that causes action. In order to cause action, a report must be written to be read. A report that does not get read is a waste of time. There are a few key things that must be considered when writing every report; these include the plan of action, goal, audience, tone, and content. Once all of these things are considered and perhaps written down as well, start organizing the material in a logical order that flows. Once all the information is organized, the report is ready to be written. Start by writing a lead, something that catches the readers' attention and quickly dives into the subject. Continue on with the facts and a conclusion. After writing the report, write an executive summary that is about 10% the size of the original report. This will serve as a brief version for people who do not have the time to read through an entire report. (Patterson, Grenny, McMillan, & Switzer, 2011, p. 114)

When writing a report, there are some things that should be avoided. First is jargon and technical details. Make sure that everything is easy to understand for the reader without much of an explanation. Second is tentative language. Write with certainty. Do not say things like "it seems" or "may". Third, never promise more than can

be fulfilled. It may be tempting to make something being proposed seem like the best thing ever, but do not go overboard and promise things that might not happen. (Patterson, Grenny, McMillan, & Switzer, 2011, p. 122)

Other Thoughts from Other Sources

The article Successful Business Communication: It Starts At The Beginning mentions the three things that should be mentioned at the beginning of every business conversation: is it going to be painful, how long will it take, and what is the bottom line. The article's suggested steps are right in line with some of the earlier suggestions of starting with the point of the conversation near the beginning. It also adds some consideration for time and whether the news is good or bad for the person receiving it. (Anderson) Another article, Communicating Effectively for Business, focuses on other aspects of communication other than what is said and how. This article mentions things like active listening, understanding non-verbal signals, and maintaining eye contact. These skills are useful additions to the communication skills already mentioned and extend into some of the other areas of communication. (Queensland)

Using Communication Skills

Going into this IQP, we knew we would be communicating with a lot of people. For example, setting up a pipeline into WPI involves communication with the people who would be part of its creation. We also plan on working with departments and professors at WPI. Learning a mix of email communication and personal conversation skills provided a good background for this project. The skills we researched on communication allowed us to communicate our objectives in a brief and understandable manner. We have also combined this with the ability to speak persuasively - to gain support for our objectives. When we are not communicating with others, we will use our skills to cause action and get results within our IQP group and achieve tasks in an efficient manner. (FT Press Delivers, 2010)

Section 5: Strategic partnerships between universities and industry

Models for university-industry Partnerships

The value of applying and adapting models for university-industry partnerships is demonstrated in several examples from literature. Works such as the, Academic Program Portfolio Model (APPM) (Wells, R., & Wells, C., 2011) and Models for Academic / Industry Partnerships (Chuck R., 2008), address the same two aspects that most academic institutions address through their strategic partnerships: to externally create a public figure and form a sustainable external relationship with sponsors (companies); and to internally allocate resources (faculty, staff, student, etc.) and ensure the best quality of the program.

Academic Program Portfolio Model for universities (Wells, R., & Wells, C., 2011)

The Academic Program Portfolio Model (APPM) is a product portfolio analysis tool for universities. It is adapted from the General Electric McKinsey Product Portfolio Model used largely in business. The APPM's analysis will help academic administrators assess their strategic direction, capabilities, resource allocation, and performance expectations.

Models for Academic / Industry Partnerships (Chuck R., 2008)

This report presents an overview of the four types of academic-industry partnership models: research based, program based, subscription based, and student based. Additionally, this report discusses success factors and potential problems for each type of partnership.

Guidelines of university-industry partnerships

MAKING INDUSTRY-UNIVERSITY PARTNERSHIPS WORK- Lessons from successful collaborations (Business Innovation Board AISBL, 2012) advocates a new form of strategic partnership between universities and industry,

which goes beyond the traditional funding of discrete projects. Case studies from top universities worldwide demonstrate how successful strategic partnerships with industry can make impact on the social and economic growth.

A Guide for Successful Institutional-Industrial Collaborations-- Researcher Guidebook (UIDP., 2012)

This guidebook prepared by the University-Industry Demonstration Partnership (UIDP) provides a resource for active researchers who wish to advance institutional-industrial collaborative relationships at their institutions. This guide addresses the ten key issues that are critical to achieving healthy, productive, and sustainable collaborations, including: establishing contacts, budgeting, compliance issues, intellectual property concerns, etc., and recommends good practices and philosophies for both institutional and industrial side.

Best Practices for industry-university collaboration (MITSloan, 2010)

This report proposes a set of seven guidelines that help to measurably enhance the capability of industry-university collaboration, through the study of 100 projects at 25 multinational companies that engage in collaborations with a broad base of universities.

Chapter 2: Methodology

The goal of this project was to make startup company sponsored MQPs more readily available for WPI students by creating a formal process for starting them. Being able to work with startup companies on an MQP would offer students the opportunity to learn about entrepreneurial firms first hand as well as complete their MQP, which is necessary for graduation. As of now, there is not a formal process in place for starting company sponsored MQPs. Someone, a student, professor, or company employee, would have to be willing to take the first steps. The current method relies mainly on someone being willing to start a project. In order to increase the amount of startup company sponsored MQPs available for WPI students, we created methods for establishing student led projects with innovative startup companies, so WPI students can get exposure to the venture, creation, and growth associated with startup companies.

Project Planning and Proposal Writing

This IQP, by its nature, is intertwined with multiple organizations and industries. In order to best organize our tasks and keep track of progress, we utilized computer systems, online project management applications, and online storage systems, to make sure everything is in place. A project timeline was created at the beginning by using Microsoft Project software. An online storage system, Dropbox, was chosen for all members to share files via the internet. An online project management application (mobile application), asana, is used to assign tasks and check work status. Microsoft Outlook is used to schedule meetings and reserve conference room for meetings. Emails and group messages are used as communicators to ensure good communication between members.

First Meeting with Professor Hoy

Going into this IQP, we were not certain what we would be doing. To start things off, we went to our advisor Professor Hoy and were briefed. We were one team out of the three IQP teams working toward the same goal, getting more companies to come to WPI and host Company sponsored MQPs. In order to make sure the three

teams had unique approaches, we were all given three startup accelerators to choose from: WPI Venture Forum, Tech Sandbox, and MassChallenge. Our goal was to design a system that would be able to take companies from one of those accelerators and form MQPs. This system would have to be set up so that no one person is keeping the system working. It should work on its own.

Startup Accelerator Selection

The selection of a good startup accelerator proved to be core to the success of this project, and at the time of selection, the team felt strongly about the organization MassChallenge. We were offered a choice between three selections; MassChallenge, Tech Sandbox, and the WPI Venture Forum. A cursory glance at each organizations web site showed that MassChallenge was the most professional and seasoned venture to peruse. Deeper research only confirmed our notions, so we selected MassChallenge to work with.

Despite only starting in 2010, MassChallenge has matured very fast and receives over 1000 applications from startup companies for 130 spots. The companies that MassChallenge invites to be finalists are very diverse, and for the 2013 competition, MassChallenge categorized them into the following categories: High Tech, General, Social Impact, Energy/Clean Tech, and Healthcare/Life Sciences. MassChallenge is also sponsored in part by WPI. Other notable backers of MassChallenge are; Microsoft, Fidelity Investments, Verizon, Oracle, American Airlines, and The Commonwealth of Massachusetts. With such a diverse line up of companies, and a solid track history, complete with a strong list of sponsors, MassChallenge was the best choice for this project.

Meeting with MassChallenge

Through our advisor, Professor Hoy, we were put into contact with the partnership advisor at MassChallenge. Her job is to act as a liaison to potential partnerships. Our team organized a phone meeting with the Liaison to understand how MassChallenge works once they have selected their 130 or so finalists. We learned that all the finalist companies are invited to use office space at MassChallenge, and that MassChallenge interacts with these companies on a daily and personal basis. This information helped us better understand MassChallenge, and

allowed us to begin formulating our system, being sure to design it so that MassChallenge could use it very easily, and adapt very quickly.

Side Project - Communication with Semaphores and Rifiniti

As part of this project, our advisor and stakeholder, Professor Frank Hoy, expressed the need for us to begin communicating and working with Startup Companies. In the spring of 2013, two startup companies, Semaphores and Rifiniti, contacted Professor Hoy because they were interested in completing an MQP at WPI. As the direct connection between WPI and outside Startup companies, he gathered more information about their needs and requirements. After maintaining these two relationships for the next few months, Professor Hoy gave us the opportunity to further investigate how WPI could best serve their needs and to figure out the best process for matriculating Startup companies through the MQP initiation process by using these two companies as the pilot to our recommendation.

First step: Emails and soliciting on-site meetings.

After receiving Semaphores' and Rifiniti's contact information from Professor Hoy, we began our first step in the MQP initiation process. We introduced them to our team, the scope of our project, and suggested that we meet onsite so we could meet them, figure out what they needed, and figure out how WPI students could help them complete their projects. A sample of one of the emails we sent is below.

Hello Tom,

My Name is Stephen Fowler, and I am working with Professor Hoy alongside Adam Taylor, Benjamin Senecal, and Dongni Zhang. We are the WPI Entrepreneurial Outreach Project Team, or simply, WEOPT. We are eager to set up a time for a meeting with Mofin to discuss MQP possibilities. Historically Friday afternoons have been a good time for our team to meet, but let me know what's good for you. I look forward to hearing back from you.

*Stephen E. Fowler
Mechanical Engineering
WPI Entrepreneurial Outreach Project Team*

Second Step: Onsite MQP Needs Analysis

After communicating with Semaphores (previously named “MoFin Technologies”), we were fortunately able to setup a meeting here at WPI to discuss the possibility of creating an MQP. Unfortunately, we were unable to setup a time to meet, or create an MQP with Rifiniti as they made it into the final rounds of MassChallenge 2013 (a startup accelerator competition).

During our onsite meeting with the CEO of Semaphores, Julie Tittler, and the COO Tom Todd, we were able to figure out exactly what they needed from an MQP at WPI. This onsite meeting with Julie and Tom occurred on October 18th 2013 in WPI’s Campus Center. We started the meeting by introducing ourselves as WPI’s Entrepreneurial Outreach Project Team, or WEOPT for short. We noted how our partnership with the Career Development Center and the Office of Corporate Engagement led to us forming a project focused on introducing startup companies to WPI’s Major Qualifying Projects. Following our introductions, Julie formally introduced herself and the vision behind their new Life Sciences health application. With their interest and credibility earned, we then began asking them a bit more about how they became interested in WPI and what they already had in mind for their projects. Julie originally found out about WPI’s MQP by meeting with Professor Hoy at a MassChallenge event. She stated that this relationship with Professor Hoy motivated them to continue through the current MQP Process.

For the remainder of the meeting, we reviewed and answered their remaining questions to the best of our ability. One of their biggest concerns was finding students and advisors for their project in a quick time frame. We explained the WPI’s general MQP requirements as follows:

- ⌚ Projects must allow for the application of the skills, methods, and knowledge of the students’ discipline to solve a problem representative of the type to be encountered at the professional level.
- ⌚ Projects must encompass research, development and application.
- ⌚ Projects should involve analysis or synthesis, being experimental or theoretical, and emphasizing a particular concentration in the major or combine aspects of several subareas.
- ⌚ Projects must be a capstone design experience.

After reviewing and confirming that Julie and Tom understood the general requirements for sponsoring an MQP, we began gathering requirements for the Exhibit A form, an MQP Project Proposal form, by discussing the types of projects they wanted to do at WPI. The following are notes gathered during the meeting.

Meeting Notes: Proposed Project Topics

Internationalize Product to support Spanish speaking countries

1. Translate code and UI elements into Spanish
2. Research, suggest, and implement UI changes based on Spanish culture

Gamify” the App (IMGD, possibly Student Disability)

1. Keep younger users engaged with application
2. Encourage or educate the users
3. Younger kids with ADHD, students after a frat party, etc.
4. They need to be reminded in a timely fashion.

Design Marketing portal and customer support back end

1. Using Drupal
2. Integrated with market and social media
3. Help them help themselves
4. Engaging!

Develop a pattern recognition system that uses “glyphs” to enable the application to prove that the correct medicine was taken.

1. Print out pattern (glyph) to stick on medicine bottles
2. scan bottle to make sure the cliff is the correct one
3. Physically match up cliff with eyes to one on screen
4. Large foam sticker

Develop a plan for massive data/server infrastructure scale up

1. amount of cloud hosting
2. how quickly customers are going to join
3. server usage / network bandwidth

4. demands on support services

After the MQP requirements were gathered from Semaphores, we regrouped and began working closer with the Office of Corporate Engagement. With their help, we completed the following steps: MQP paper work, advisor search, project handoff. The next section details how we partnered with the Office of Corporate Engagement.

Office of Corporate Engagement

Research

Our research showed that the Office of Corporate Engagement plays an important role in creating Major Qualifying Projects (MQPs) and maintaining relationships between Worcester Polytechnic Institute (WPI) and external organizations. To further learn about their responsibilities and look for potential cooperation, we scheduled an interview with the Director of Business system, Brian D. Degon.

Interview

Interview with Director Degon: From the interview with Brian, we learned that within the Office of Corporate Engagement, there is a team dedicated to sourcing companies to sponsor MQPs and creating contracts to ensure proper and sustainable partnerships between WPI and those corporations. Sharon Deffely, the executive director of the Corporate Engagement Office, leads this team which primarily deals with organizational, administrative, and legal issues with sponsoring companies in the MQP creation process. Their responsibilities include but are not limited to: bringing in companies to sponsor a variety of WPI projects, maintaining partnerships between WPI and companies, negotiating costs and fees for projects, and making contracts for the sponsors.

Interview with Director Deffely: Sharon Deffely, the executive director of the Corporate Engagement Office, introduced the Office's duties in establishing company-university partnership and creating MQPs. We learned that they already have a list of companies that WPI frequently partners with, and that they are happy to enlist more that could form long term partnerships with WPI. They also work in conjunction with the Career Development Center (CDC), to recruit project advisors and manage the organizational tasks on the academic side of the project. Throughout the interview, Sharon introduced four required documents to initiate an MQP:

- Exhibit A form – a project proposal to be validated and signed off by advisors;
- Exhibit B form – budgets, such as, the project fee, travel cost, and equipment cost (if applicable), to be signed off by companies;
- Exhibit C and D form – a release form to be signed by students and faculties, respectively; and
- Contract (Project Agreement) – document to be edited upon special legal requirements from companies, and signed by companies.

The Exhibit A form is prepared by Career Development Center; the Exhibit B, C and D forms are handled by the Corporate Engagement Office. Apart from all the exhibit forms, a contract needs to be formulated to address special legal requirements from the sponsors. Each sponsor has to negotiate individually with the Corporate Engagement Office's Contract Administrator in order to have the contract customized. All contracts are made in addition to the Standard Project Agreement, which is reviewed and updated on an annual basis by the Legal Counsel in the Corporate Engagement Office.

During the meeting, Sharon also agreed to launch a pilot project with one of the MassChallenge startup companies, Semaphores, as a new MQP sponsor for WPI. Our team worked with the Corporate Engagement Office and Career Development Center on the preparation process and delivered the exhibit forms to the Contract Administrator for contract negotiation.

Interview with Director Ortendahl: David Ortendahl, the Associate Director of Career Development Center, introduced the CDC's role of handling the Exhibit A form and related academic affairs in the MQP creation process. The tasks include but are not limited to: matching professors with projects, maintaining professors' availabilities and research interests, holding MQP networking events, and advertising MQP opportunities.

Chapter 3: Findings

In the previous section, the methodology, we detailed several pivotal events that led to the formation of our primary and alternative recommendations. Most notably, our findings from our time with: the Office of Corporate Engagement, MassChallenge, and WPI faculty members proved to be the most beneficial to this project. Additionally, our research on the sponsorship programs at other Universities proved to be beneficial.

Corporate Engagement

The Office of Corporate Engagement is a department here at WPI that focuses on building and maintaining relationships between WPI and outside companies. They were ecstatic to work with us, and we are glad that they are becoming more known because of it. As of now, they handle a lot of the paperwork and organization involved with MQPs that are sponsored by companies external to WPI. When we first communicated with them, they made it clear to us that they were responsible for many company sponsored MQPs and were also looking for ways to expand their work and branch out more into the MQP process. Because of the nature of their department, and their desire to be expand, we found them to be the perfect organizational power at WPI for our project.

Since we are utilizing the Corporate Engagement Office, there will be increased responsibilities for this office that we wish to detail now, en mass. For one, we expect this office to communicate with startup accelerators in order to inquire to their liaison about companies who could potentially host an MQP. The office is also responsible for contacting students and potential advisors about available opportunities. If a student replies to the office about a project that does not have an advisor yet, the office should advise the student on how to go about obtaining an advisor and recommend professors who can currently add advising an MQP to their work load. We also expect this office to see the creation process of an MQP from inception, until the contract between the company and WPI is signed. Planning of the Annual MQP Fair, though it should be handled by multiple departments working in conjunction, should be an effort lead by the Office of Corporate Engagement.

MassChallenge

For our first contact with MassChallenge, we talked with Kara Shurmantine the partnership manager on the Business Development team at MassChallenge. We found out that MassChallenge would be very happy to work with WPI. They have a mentor program where they offer business advice as well as other services to the startup companies they work with. An MQP would fit in perfectly with other forms of help that can be offered to the companies. Before giving MQPs to companies at MassChallenge, the companies would have to be briefed on what an MQP is and what to expect from it, since many companies may know nothing about them. The Business Development team at MassChallenge would be able to help inform companies and get them ready to be a host for an MQP. They would also be able to send companies toward the office of Corporate Engagement at WPI to work out the rest of the details for hosting an MQP.

Administrative Interviews

In our meeting with Sharon Deffely at the office of Corporate Engagement, we got a better understanding of how her office works. They work on forging relationships between companies and WPI, just like the relationship between a company and a WPI MQP team. We also found out that the office of Corporate Engagement is relatively new, and they are still working toward establishing themselves. This would be a perfect opportunity to build a company sponsored MQP process into their department. In our methodology, we explained how some department at WPI would be required to work with startup companies for a system to be established. Since the Office of Corporate Engagement already works with outside companies and is in the process of establishing their role as a department, we believe they would be a good place to consider for our recommendation.

After an interview with David Ortendahl at the Career Development Center, we found out more about how companies seeking MQPs were given advisors. David would look up professor's profiles online and email or call the professors who have an area of interest in the same area as a potential MQP. This process is very dependent on one person being willing to go through all the work of finding an advisor themselves. We realized that a better solution is needed for finding advisors that is less dependent on one person to get things done. The solution

we considered is having a department handle finding professors. This would solve the issue of having a choke point in the system where if one person leaves, the whole system breaks. In our recommendation, we go into more detail with which company takes on this role.

Findings from Other Universities' sponsorship program

One of the missions of this IQP is to improve the current sponsor recruitment process. Instead of relying heavily on faculty members' personal connections, we suggest forming a pipeline between companies and university resources to enable better regulation of how startup companies are recruited.

Through research on how universities market their resources and advocate sponsorship opportunities, it was revealed that the mainstream still utilizes faculties' personal connections in the industry; however, many higher education institutions have adopted Internet marketing as their new method for accessing large audiences. By setting up their sponsorship program websites to contain information about project availabilities and sponsorship requirement, potential sponsors can easily access the information that they need.

Functionality wise, websites for sponsorship opportunities can be predominantly categorized into the following two types:

- Informational - an informational website is dedicated to introducing research or project opportunities. From general research areas to specific topics available, the opportunities all have some information about the research or project and contact points typically sorted by department. Some sites include a FAQs page, a sample form, and/or a past project showcase. This type of website offers information on different levels, depending on the availability of projects in the university. By the nature of an introductory website, it also gives both universities and sponsors flexibility in the preparation process – the topic selection, schedules, and other issues are discussed offline, in a personal setting with project advisors, faculties, or administrative personnel. The website functions as a resource guide that navigates prospective sponsors through available resources and projects in the university and offers them enough information to know where to go to get started.

- Registration Based - an online application system allows companies to register to be sponsors directly online. This type of websites is sophisticated and more carefully designed than the informational one. Because the process is automated, minimal manual work is required. The application system will guide companies from proposing projects to customizing contracts, and any documents will be routed to the correct department or person for validation. This system saves a considerable amount of time and work for both the universities and sponsors, due to the reduced labor cost, travel cost, and improved efficiency. The building of the website can be costly, but once established, the automated registration will greatly improve the sponsor recruitment process and reduce time and financial costs for universities.

Examples from actively industry-involved universities in the US are listed below, which showed diverse website architectures and differing emphases.

Informational website: by projects

Example: University of Michigan (http://bec.umich.edu/recruit/student_projects/) (Student projects, 2014)

The screenshot shows the University of Michigan Business Engagement Center website. The main navigation bar includes 'Recruit', 'Research', 'License', and 'Educate'. Below this, there's a 'Student Projects' section with a description of the program and a table of project opportunities.

Business Need	College/School/Unit	Project Sponsor's Cost	Submission Deadline for Proposals	Contact
Design, build, test prototypes; simulation of work processes; engineering and operations plans	College of Engineering Multidisciplinary Design Program	\$15K	Late spring for projects starting on January 1	Gail Hohner (734) 763-7421
Design projects for the two BME capstone design courses that involves the design, build, and test of a prototype for clinical or biomedical research applications.	College of Engineering Biomedical Engineering Design	Project dependent, should cover the fabrication validation and iteration of mock-ups and prototypes	August 1 for Fall Term, November 1 for Winter Term	Rachael Schmedien (734) 763-0575
Marketing strategy, market analysis, market entry, strategic planning, financial modeling, sustainability, product launch, operations processes, mergers and acquisitions	Stephen M. Ross School of Business Multidisciplinary Action Projects (MAP) Program	Student travel, and other project-related expenses	November 22, 2013	Gale Amyx (734) 763-3647
Marketing strategy, market analysis, market entry, strategic planning, financial modeling, sustainability, product launch, operations processes, mergers and acquisitions	Stephen M. Ross School of Business Global MBA Multidisciplinary Action Projects (MAP) Program	Student travel, and other project-related expenses	March 1, 2014	Linda Lillemoen (734) 764-6411
Average Student Work Experience: 8 years				
Marketing strategy, market analysis, market entry, strategic planning, financial modeling, sustainability, product launch, operations processes, mergers and acquisitions	Stephen M. Ross School of Business Executive MBA Multidisciplinary Action Projects (MAP)	Student travel, and other project-related expenses	Early July	Andy Lawlor (734) 763-5809

Figure 1: Webpage of University of Michigan- business engagement center. This website presents a list of available projects, with detailed project information, sponsor requirements, and points of contact.

Example: Vanderbilt University (<http://engineering.vanderbilt.edu/ge/engineering-management/ProspectiveSponsors/>) (For Prospective Project Sponsors , 2014)

The screenshot shows the website for the Vanderbilt University School of Engineering, specifically the 'For Prospective Project Sponsors' page. The header includes the Vanderbilt logo and 'School of Engineering' text, along with navigation links like 'VANDERBILT HOME', 'NAVIGATE VU', 'TOOLS', and 'SEARCH VU'. Below this is a secondary navigation bar with links for 'ABOUT US', 'ACADEMICS', 'RESEARCH', 'NEWS', 'ADMISSIONS', and 'CONTACT US', plus a search bar. The main content area has a breadcrumb trail: 'Home > General Engineering > Engineering Management > Prospective Sponsors > For Prospective Project Sponsors'. The title 'For Prospective Project Sponsors' is prominently displayed. Below the title, a welcome message addresses prospective project sponsors. Two paragraphs follow, explaining the university's goals for providing a deep-immersion experience and the value of projects to sponsors. A link 'How Projects Work' is provided for more information. A section titled 'Types of team projects' includes a sub-section 'Technology Marketing' with a paragraph about market potential. On the right side, there are two sidebars: 'ENGM MINOR' with links for 'Program Requirements', 'Course Information', 'Faculty and Staff', 'For Prospective Project Sponsors' (highlighted), 'Driving and Parking Directions', and 'GE Home'; and 'RECENT GE NEWS' with three news items dated March 2014.

VANDERBILT  School of Engineering

VANDERBILT HOME NAVIGATE VU TOOLS SEARCH VU

INSIGHT. INNOVATION. IMPACT.®

ABOUT US ACADEMICS RESEARCH NEWS ADMISSIONS CONTACT US SEARCH

Home > General Engineering > Engineering Management > Prospective Sponsors > For Prospective Project Sponsors

For Prospective Project Sponsors

Welcome, prospective project sponsors

As we go about trying to give our undergraduate engineering management students the best possible preparation for their future careers, we recognize that there is an incomparable opportunity to give them a deep-immersion experience right in Vanderbilt's immediate environs, in companies in the Middle TN corporate and entrepreneurial community who might consider hosting a student team semester project.

We also recognize that the projects must offer meaningful value to the sponsors. To make sure that happens, we want to build a long-term relationship with our sponsors where we meet you wherever you are on your own journey as an enterprise and help you take the next step or two. This may involve a series of projects over time – such as marketing, enterprise systems design, innovation strategy, senior design, etc. Where you need some more feet on the street, another set of ears to the ground, some independent research and analysis, or just some fresh thinking, if we can provide it, we'd like to be there for you.

This page summarizes the types of team project available. For information on how all the projects work (the What, Why, Who, When and How of projects), please see [How Projects Work](#).

Types of team projects

Technology Marketing

Have you fully exploited the market potential of your organization's core technologies? Underexploited or unexplored opportunity areas might include new market segments to be pursued, new products or services in which to embody your technology, new delivery or go-to-market strategies, more effective marketing communication, and more finely honed

ENGM MINOR

- Program Requirements
- Course Information
- Faculty and Staff
- For Prospective Project Sponsors**
- Driving and Parking Directions
- GE Home

RECENT GE NEWS

- Retired Monsanto leader recalls years as Vanderbilt basketball standout MARCH 25, 2014
- Guatemala trip offers students 'engineering in action' MARCH 17, 2014
- Engineering students to pitch wound healing product at inventors showcase in Silicon Valley MARCH 14, 2014

Figure2: Webpage of Vanderbilt University- School of Engineering, “For prospective project sponsors”. This website provides high-level project information with flexible sponsor requirements.

Example: University of California, Los Angeles (<http://oip.ucla.edu/industry-sponsored-research/>) (Industry Sponsored Research, 2014)

The screenshot shows the homepage of the UCLA Office of Intellectual Property & Industry Sponsored Research. At the top left is the UCLA logo and the office name. To the right is a 'QUICK REFERENCE' button and a search bar. Below this is a dark blue navigation bar with links: Researchers, Entrepreneurs, Industry, News & Events, About, and Contact Our Team. Under the 'Industry' link, a breadcrumb trail reads 'HOME » RESEARCHERS » INDUSTRY SPONSORED RESEARCH'. To the right of the navigation bar are two buttons: 'Browse Technologies' and 'Disclose an Invention'. The main heading is 'Industry Sponsored Research'. The introductory text states that the office handles various agreements involving research funded at UCLA by for-profit industry sponsors. It mentions that if research will involve interactions with and funding from industry sponsors, the Industry Contract Officers will help with the process. A paragraph follows, stating that officers assist from proposal submission to post award processing, negotiating various research agreements with industry, ranging from subcontracts based upon federal government awards to confidentiality agreements to multi-million dollar sponsored research agreements. Another paragraph mentions that more information regarding specific types of agreements, instructions on how to get started, relevant forms, and UC policies can be found below. There are two sub-sections: 'Awards and Agreements' and 'ISR Forms and Policies', each with a brief description of the content provided.

UCLA Office of Intellectual Property
& Industry Sponsored Research

QUICK REFERENCE Search this site

Researchers ▾ Entrepreneurs ▾ Industry ▾ News & Events About ▾ Contact Our Team

HOME » RESEARCHERS » INDUSTRY SPONSORED RESEARCH

Browse Technologies Disclose an Invention

Industry Sponsored Research

The Office of Intellectual Property & Industry Sponsored Research handles various agreements involving research funded at UCLA by for-profit industry sponsors. If your research will involve interactions with and funding from industry sponsors, our Industry Contract Officers will help with the process.

Our Officers are here to assist you from beginning to end - from proposal submission to post award processing. We negotiate a variety of research agreements with industry, ranging from subcontracts based upon federal government awards received by industry (including SBIRs and STTRs) to confidentiality agreements to multi-million dollar sponsored research agreements.

More information regarding the specific types of agreements handled by OIP-ISR including instructions on how to get started, relevant forms, and UC policies governing industry sponsored research can be found below.

Awards and Agreements

This section identifies the process and internal requirements associated with each type of industry-sponsored activity managed by the Office of Intellectual Property & Industry Sponsored Research

ISR Forms and Policies

Provides direct links to the individual internal proposal documents required to begin the process and identifies the underlying policies that implement each document

Figure 3: Website of University of California, Los Angeles- Office of Intellectual Property & Industry Sponsored Research. This website provides another example of organizing information on a high-level view.

Example: Iowa State University (<http://www.industry.iastate.edu/flexiblesolutions/>) (Industry Relations, 2014)

IOWA STATE UNIVERSITY
INDEX A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
E-Mail/Phones | ISU Search

Industry Relations

Iowa State University Economic Development

- Entrepreneurship
- Business Assistance
- Technical Assistance
- Technology Commercialization & Licensing
- Business Incubators & Physical Space
- Research Park
- Instrumentation & Service Facilities

Industry-Sponsored Research
Proof of Concept Initiative
Philanthropy
Research Strengths
Faculty & Staff Expertise
Success Stories
Newsletters
Additional Resources
For Faculty/Staff
Students

Flexible Solutions

For Industry Engagement in Research

Welcome to Iowa State University's Flexible Solutions program for engaging industry in sponsored research.

From a traditional model, to our newest approach where companies may pre-pay an option fee with a predetermined royalty rate, this program provides a wide range of solutions to help maximize efficiencies and reduce the financial risk related to commercializing university technologies.

Whatever your research needs are, Iowa State has a Flexible Solution for you!

[Link to news release](#)

Sponsored Funding Option A: Traditional

- The laws of inventorship determine ownership
- Royalty-free non-exclusive license; option to an exclusive license
- No upfront fees for non-exclusive license
- No pre-set royalties
- Sponsor and ISU negotiate the terms of an exclusive license after IP is developed
- ISURF owns patent and manages patent activity to protect inventors' interests and signs and maintains the license agreement

Sponsored Funding Option B: Pre-Negotiated Consideration For An Option To An Exclusive License¹

- The laws of inventorship determine ownership
- Sponsor pays full cost of the research, including the federally negotiated F&A rate
- Sponsor prepays 10% of sponsored research project costs (\$15,000 minimum) for exclusive worldwide rights, with right to sublicense, to all patentable inventions or software arising from the sponsored research project^{3,4}
- Sponsor manages, directs, and pays for all patenting activities (must collaborate with ISU on patent claims)




Figure 4: Webpage of Iowa State University- Industry Relations. This website provides sponsors with “Flexible Solutions” on funding plans.

Informational website: by procedure

Function: Guide students, faculties and sponsors through each and every step of the project preparation process.

Example: Pennsylvania State University (<http://www.research.psu.edu/osp/prepare-proposals/>) (Prepare Proposals, 2014)

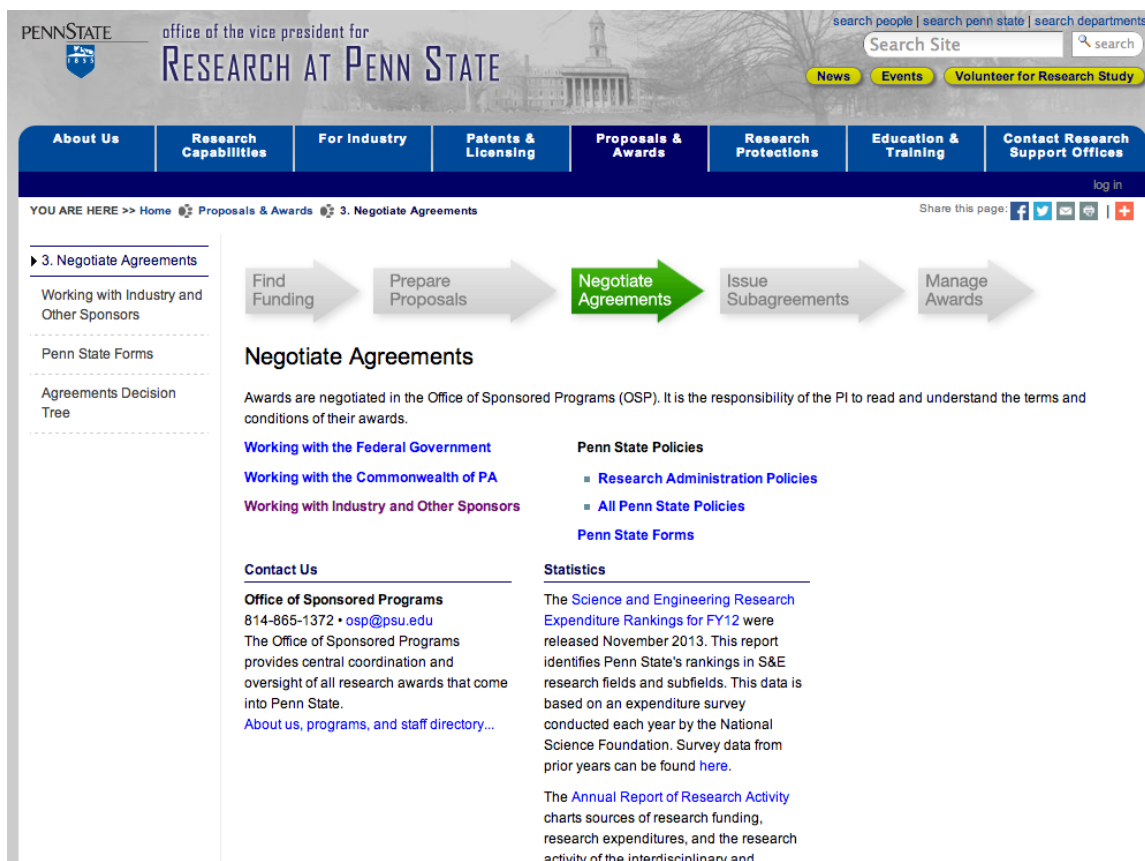


Figure 5: Webpage of Pennsylvania State University- Office of Sponsored Programs, “Proposals & Awards”.

Procedure of proposing a project and standard forms are easily accessible by students, faculties and sponsors.

Example: University of California, Berkeley (<http://www.spo.berkeley.edu/procedures.html>) (Sponsored Projects, 2014)

UC Berkeley

MAP | bCONNECTED | SEARCH SPO

Research Administration and Compliance

Research Administration and Compliance | ACUC | COI | CPHS | SPO | Vice Chancellor for Research

Sponsored Projects

Procedures

Proposal Preparation

- [New to Grants and Contracts?](#)
- [Proposal Checklist for PIs](#)
- [Standard Institutional Information for Proposals](#)
- [VCR Policy on Late Proposal Submissions to SPO and FAQ](#)
- [Quick Guide to Proposal Review and Submission](#)
- [Guidance for Review of Proposals by Deans, Directors, and Department Chairs](#)
- [Proposal Budget Basics](#)
- [Cost Sharing Basics](#)
- [Proposal Writing Resources](#)
- [Grants.gov at Berkeley](#)
- [Executive Order 12372 \(Federal SF 424\)](#)
- [NIH Proposals and Awards at Berkeley](#)
- [Quick Guide to Working with NSF's FastLane](#)
- [Responsible Conduct of Research \(RCR\)](#)
- [NASA Restrictions on Funding Activities with China](#)
- [proposalCENTRAL at Berkeley](#)
- [SPO Electronic Proposal Drop Box](#)
- [Working with Subrecipients](#)
- [Industry Proposals and Agreements](#)
- [LLNL Agreements](#)
- [Limited Submission Proposals](#)

On this page

- » [Proposal Preparation](#)
- » [Award Administration](#)
- » [Fiscal Policies and Procedures](#)

Related Links

- [Information for Principal Investigators](#)
- [Policies](#)
- [Compliance and Administration](#)
- [UC Berkeley Campuswide Policies and Procedures](#)
- [UCB VCR Research Policies and Administration](#)

Sponsored Projects Office
 2150 Shattuck Avenue,
 Suite #300
 Berkeley, CA 94704-5940
 510/642-0120
 510/642-8236 (fax)

Figure 6: Webpage of University of California, Berkeley- Sponsored Projects Office, “Procedures”. This website is presented in a “Q&A” style, which provides information for both sponsors and students in a user-friendly manner.

Example: Harvard University (<http://osp.fad.harvard.edu/>) (Sponsored Research Blog, 2014)

HARVARD
Financial Administration

OVPR FAD OTD HARVARD.EDU

Google™ Custom Search Search

f t e

OFFICE FOR SPONSORED PROGRAMS

THE AWARD LIFECYCLE TRAINING POLICIES RESOURCES & INFORMATION ABOUT US

SPONSORED RESEARCH BLOG

NIH'S ERA SYSTEMS CAN NOW ACCEPT PROJECT TITLES...
NIH's eRA systems can now accept project titles of up to 200 characters (previously only 81) and will soon be able to recognize and... more

NIH EXTRAMURAL GRANT SYSTEMS WILL BE OFFLINE OVER...
Please note the following announcement from NIH received on March 14: NIH Extramural Grant Systems Upgrade for Unicode Compatibility... more

THE NATIONAL SCIENCE FOUNDATION COMPLETED...
The Research.gov Team at the National Science Foundation shared the following letter regarding completed enhancements to Research.gov... more
read all

FINDING FUNDING **PREPARING A PROPOSAL** **SETTING UP AN AWARD** **MANAGING AN AWARD** **CLOSING OUT AN AWARD**

RESEARCH ADMIN LINKS
OSP Glossary
Institutional Fact Sheet
Fringe Benefit Rates
CITI (Collaborative Institutional Training Initiative)
F&A Cost Rates
Harvard Global

OSP TWITTER FEED
Follow @HarvardOSP
HarvardOSP
RT @USGrants: [NIH] High Impact Neuroscience Research Resource Grants (R24): Funding Opportunity RFA-NS-14-006 from the NIH ... t.co...
2 hours 5 min ago.
HarvardOSP

FY13 AWARD STATISTICS
TOTAL EXPENDITURES
NON-FEDERAL \$182M
FEDERAL \$639M
TOTAL PROPOSALS SUBMITTED 3914

EVENTS & HAPPENINGS
04/17 - GMAS Basics and Requests - 4/17/14
05/27 - Overview of Sponsored Projects Administration - 5/27/14
07/21 - Overview of Sponsored Projects Administration - 7/21/14

Figure 7: Harvard University- Office of Sponsored Programs. This website provides information about sponsored-project initiation procedure, with an emphasis on award management.

By combining faculties' networks and schools' public websites are both great channels to introduce project sponsors, an enhanced and more regulated university-industry communication platform is created. More importantly, students now can be introduced as part of the communication and can play an active role in the project creation process, as opposed to traditionally where the conversation between sponsors and the school

were not open to the public. Students, as participants of the MQP itself, are encouraged to take initiative and openly show interest in joining a project.

Inspired by our project advisor, Professor Frank Hoy, we believe that in order to promote the spirit of entrepreneurship and stimulate innovative thinking in students, startup companies should be systematically introduced into the sponsorship program at WPI. Our IQP team recommends the startup incubator MassChallenge as a potential source to introduce a stream of startup companies that have cutting-edge technology and innovative projects to WPI. Recommendations on collaborating with startup accelerators are made in the following chapter.

Chapter 4: Recommendations

The purpose of this study, commissioned by Worcester Polytechnic Institute's Collaborative for Entrepreneurship & Innovation, is to review the current process of bringing in companies to sponsor Major Qualifying Projects (MQP) in Worcester Polytechnic Institute, and to recommend methods to recruit start-up companies as MQP sponsors in WPI. Our primary goal was to make a system with which company-sponsored MQPs can be created without relying on a single person to have connections with a company. This goal can be broken down into four main objectives: to find a source of startup companies, to setup a system for receiving startup companies at WPI, to setup a system where students can be notified of the existing MQPs, and to setup a system where professors can be found to act as advisors for the projects. With our goal and objectives in mind, we recommend the following steps to best achieve our desired result.

Addressee(s): Mark Rice, Vice Provost of Innovation and Entrepreneurship & the Office of Corporate Engagement

Suggested Implementer: Office of Corporate Engagement

Recommended Course of Action

Step One: Utilize the Office of Corporate Engagement

The Office of Corporate Engagement is a department here at WPI, that we believe is underutilized seen by how ready and willing they were to expand and take upon additional and new responsibilities. They were ecstatic to work with us, and were glad that they are becoming more known because of it. As of now they handle a lot of the paperwork and organization process of MQPs that are sponsored by companies external to WPI. When we first communicated with them, they made it clear to us that they were responsible for many company sponsored MQPs and were also looking for ways to expand their work and branch out into the MQP process. Because of

the nature of their department, and their desire to be expand, we found them to be the perfect organizational power at WPI for our project.

Because we are utilizing this office, there will be increased responsibilities for this office that we wish to detail now, en mass. For one, we expect this office to communicate with startup accelerators in order to inquire to their liaison about companies who could potentially host an MQP. The office is also responsible for contacting students and potential advisors about available opportunities. If a student replies to the office about a project that does not have an advisor yet, the office should advise the student about how to go about obtaining an advisor, and recommend professors who can currently add advising an MQP to their work load. We also expect this office to see the creation process of an MQP from inception, until the contract between the company and WPI is signed. Planning of the Annual MQP Fair, though it should be handled by multiple departments working in conjunction, should be an effort lead by the Office of Corporate Engagement.

Step Two: Communicate with and source potential MQPs from MassChallenge

Communication Strategy 1: Campus Representative and Office Hours

In order to: 1) expand WPI's influence within the MassChallenge community, and 2) attract a greater range of companies to learn about and become interested in sponsoring WPI's MQPs, a reliable marketing and communication plan is needed. Holding Office Hours onsite in MassChallenge's office is the most direct and sincere way to represent WPI and broadcast their MQP sponsorship opportunities. In order to conduct the office hours, a team of two representatives should be assembled: one WPI faculty member partnered with a single student representative, CDC staff, or Office of Corporate Engagement staff member. Office hours with MassChallenge should be held frequently, prior to the MQP application season. Unfortunately, we cannot suggest an optimal time to meet with MassChallenge due to the uncertainty of MassChallenge's location and schedule.

Communication Strategy 2: Monthly posts on MassChallenge Blog

Another way to contact startup companies through MassChallenge is to utilize online advertising and posting. We recommend targeting the MassChallenge Blog, since MassChallenge has a reliable community and is capable of spreading the word to innovative, sustainable, and trustworthy startup companies, which WPI can form long-term partnerships with. The frequency of the posts is set to be at least two posts each month, which is determined by the current post frequency on MassChallenge Blogs (10 days per post on average). By research, the recommended frequency for new bloggers is one post per day, or at least one post per week. We may adopt a higher post frequency as needed. To post on MassChallenge Blog, we need to contact the webmaster in MassChallenge, and negotiate advertising rate if applicable.

Step Three: Mass email students and advisors with available MQPs

Every MQP needs both students and an advisor in order to live. When MQP ideas are sourced from MassChallenge, they still need the students and advisors to give the ideas life. To get the students necessary for these MQPs, we recommend the utilization of WPI's emailing aliases. The department and grade specific email aliases could be used to email many students that the MQP would apply to while limiting the number of emails sent to students who the MQP does not apply to. Since the emails would only be sent to people who are juniors and in the same major the MQP requires, students would be less likely to ignore them over time if multiple are sent. The office of Corporate Engagement would be responsible for sending out the mass emails to the corresponding aliases. The office would then be able to follow up with responses and keep the sponsoring company informed of the progress.

With students and a company behind an MQP, it has good potential, but no life until an advisor is found for the project. The office of Corporate Engagement would also be able to handle this. They would do some research into which professors have interest in which areas of study and then contact any professors who have interest in the same area as the MQP directly via email or a phone call. Like with the students, if professors are only being contacted about MQPs that are of interest to them, they would be less likely to ignore future contacts about being an MQP advisor. The Student Email Template and Advisor Email Templates in Appendix C below are email

templates that only require key bits of information about the MQP filled in before being sent out. There is also an Exhibit A form in Appendix B that can be filled out by the startup company to give more detail about the project. This could then be sent to professors who would like to know more about the project.

Step Four: Instructions for finding MQP advisors.

A company-sponsored MQP involves the collaboration of three parties: sponsoring companies, students, and faculty advisors. Faculty advisors are the most vital stakeholders among the three. They are responsible for verifying if the project provides students with sufficient capstone design experience, if it meets the regulations and requirements of WPI academic projects, and if an MQP proposal can be turned into a contract and a partnership between the company and the school.

Once the project team decides on the topic of a project, the team will need to search for the right MQP advisor(s). To choose the right advisor(s), students have to make sure that is at least one advisor affiliated with the major field of the student. Some helpful tips based on our research on how to choose an MQP advisor (Worcester Polytechnic Institute, 2005) are to:

1. Start by asking yourself what qualities you would like to see in your advisor(s) (e.g. Who you would like to work with?);
2. Research on the webpage of your pre-selected professor(s) and see if his/her research interests are aligned with your project topic;
3. Browse the MQP website and look for professors with pre-established MQPs.
4. Attend MQP fair hosted by your major department and meet potential advisor(s);
5. Check WPI websites frequently for news about professor's research accomplishments, funding, etc.
6. Schedule a personal meeting with the professor(s) to review your project proposal once you narrow down your list to a final list of professors you want to work with.

The student team will be responsible for preparing a brief one- or two-page description of the project, which describes the objectives of the project and the preliminary approaches as to how to conduct the project. This

description needs to be presented to the professor(s) of team's choice and the professor(s) will decide if he/she is willing to advise the project.

Step Five: Once all parties are located, we expect the Office of Corporate Engagement to setup MQP Paperwork.

With students, a company, and an advisor, the MQP is ready to come to life. All that is left is the required paperwork. These are known as the Exhibit A, B, C, and D forms. Exhibit A was already explained above as a form that details the MQP. The Exhibit B form addresses the financial aspect of the MQP by stating what financial commitments the students would be responsible for. Next, the Exhibit C and D forms are for students and faculty, respectively. These forms bind the students and advisor to the project. All of these forms can be referenced in the appendices at the end of the report.

Step Six: Decide if companies are eligible to sponsor an MQP

Once all of the necessary paper work has been completed, we recommend the Office of Corporate Engagement to decide whether the Startup Company is eligible to sponsor an MQP. The criteria used to decide whether the company is eligible should assess the company's:

- **Compliance with the general MQP standards.**
 - Project activities must encompass research, development and application.
 - Projects must involve analysis or synthesis, be experimental or theoretical, and emphasize a particular concentration in the major or combine aspects of several subareas.
 - Projects must be in the students' major areas of study
- **Capacity to provide a Project Liaison to guide the students and faculty advisor on the project.**
- **Ability to offer direct financial support to WPI**

- For all costs incurred (mailing, copying, information searches, local travel, supplies, or any other expenses authorized by the sponsor to conduct the project) through a reimbursement process administered by WPI.
 - For the payment of a WPI Project Fee, to be negotiated by the Faculty Advisor and/or Projects Office with the sponsor's Logistics Liaison.
- **Work space (if needed) for the students.**
- Somewhere they can establish files and have access to a telephone, clerical support, and a personal computer (if needed).

Step Seven: Host an MQP fair with help from the CDC and IGSD (Contact CDC for cost of setting up an event)

The first thing we examined was the purpose of this event. We wanted the event to add a concrete part to our recommendations. Emails and networking electronically can be very impersonal, and that can lead to a lowered participation rate among the desired parties. Holding an event on the WPI campus and inviting all parties, adds personality to the process, and by having a large event, attention will be drawn from all parties, even from the people who choose not to attend. While future email and electronic networking can still seem impersonal, a large event like this allows students, advisors, and companies to almost 'put a face to the name' remembering the concreteness of this event during any future electronic communications.

We then considered the timetable for such an event. After comparing the calendars of both MassChallenge and WPI we found the second week of September to be an ideal time for such an event. This date falls close to the middle of the four-month accelerator program of MassChallenge, and it is also the third week of A term for WPI students. Because the students have recently come back, they should be more energetic than they would near the end of the year, and excited to take part in large events. This is also an ideal time for the startups hosted at MassChallenge, because it happens toward the middle of the accelerator timing, the companies will neither be struggling to move in, or bearing down in anticipation of the finals.

Organization and location of the event was the next point to be considered, and we decided that the office of Corporate Engagement can work with the IGSD to organize such an event, and considering this event is similar

to Career Fair, the CDC would more than likely have some input on how to more smoothly run the event. The location would ideally be on the quadrangle, however it could easily move to the Harrington Auditorium in case of rain.

The last piece of the puzzle was attracting all relevant parties. MassChallenge can be reached by the Office of Corporate Engagement, and since MassChallenge normally advises its startups, they will relay the information to the companies that they think are suitable for hosting an MQP. The students can be reached with email notifications, as well as posters around campus. A member of the Office of Corporate Engagement can also 'table sit' in the Campus Center. Prospective MQP advisors can be reached in much the same way as the students, but it would cater to their interests to detail briefly what kinds of companies will be attending, allowing the advisors to seize potential networking opportunities with these developing startups.

Step Eight: Contract making

In addition to all the exhibit forms, a contract has to be made to obligate and protect all parties in the sponsorship program. The Contract Administrator in the Corporate Engagement Office is responsible for discussing legal agreements with companies, and will oversee the completion of the contract among sponsors, faculties and students. On the WPI side, sponsorship requirements will be updated and reviewed by the Legal Counsel annually.

Chapter 5: Conclusion and Justification

For a source of MQPs, we chose MassChallenge for its significant growth and success in the last few years. Despite the company only starting in 2010, it has grown a lot and even reached the point where it had over 1,000 startup company applicants apply for their accelerator program in one year. MassChallenge also has a lot of big name supporters like Microsoft, Verizon, and EMC which will help MassChallenge grow even more in the future, therefore making the company stable and worth creating a system with. Every IQP has a goal to achieve something sustainable. With a startup accelerator like MassChallenge, we believe that this will form a sustainable relationship between WPI and MassChallenge that will benefit both parties.

For the receiving end at WPI, we recommend the office of Corporate Engagement within WPI. The goal of this office is to work with companies to provide access to the resources WPI has to offer. Since part of our goal of this project is to offer students as resources for companies to use, their mission as an office is perfectly in line with what our system will do. This means that the office of Corporate Engagement would be able to take on the task of making MQPS given startup companies from MassChallenge without abandoning their mission as an office. This forms a sustainable change at WPI that will provide companies with a place to go for creating an MQP as well as WPI professors and student.

For the task of getting students and advisors for MQPs, we recommend the creation and utilization of an MQP fair. An MQP fair would start off small but have the potential to become a large event and therefore carry a lot of the benefits of a large event like being able to draw large crowds and attention.. Having one unified event would also make getting students a lot easier. Companies that require a diverse group of students with diverse skills to work on a project would be able to get all the students they need at this one event rather than having to go to each department individually. We also plan on the MQP fair having a large sustainable aspect to it. In order to be most effective, the MQP fair would be hosted annually to constantly attract more attention.

In addition to an MQP fair, we also recommend the use of the WPI email alias system. This system is already in place and very low cost and low risk to use. It also has a high potential of success based on the number of people

who are affected by a mass email. The emails would also be used to spread work and gain interest in the career fair.

After speaking to our advisor, Professor Frank Hoy, about the information we gained looking at the sample consultant's report, he made some recommendations to us about the content. He suggested that our consultant's report be significantly shorter than the one we reviewed. He also suggested that we have, in the appendix to the consultant report, a section on alternatives to our recommendations. Despite making several other recommendations and adjustments, our research greatly helped us design our consultant's report.

For the sake of brevity, we decided to merge the Title page and the Cover page of our consultant's report. Therefore our cover page contains the name of the organization we submit the report to (WPI), our names and contact information, a statement addressing the fact that we worked under the advisement of Professor Hoy, the project name, and the final submission date.

Following the recommendations of Professor Hoy, we then had a brief introduction section stating our goals and objectives from the report. This section was then followed by brief recommended action section where we outlined action item recommendations. We then followed that section with an in depth section for each of the action items, and plans to implement them. Next came a section in which we justified each of our recommendations. Finally we added an appendix that contains alternative recommendations, pertinent forms to the MQP creation process, email templates, and reference sources.

Satisfying WPI's IQP Learning Outcomes

Creating this system for recruiting startup and entrepreneurial firm sponsored MQPs, satisfies WPI's eight IQP learning outcomes. We satisfied these requirements in multiple ways throughout this project experience. When we initially began this project we solicited our project's technical, social, and humanistic requirements by conducting several interviews with our project advisor, the startup companies we've interacted with, and WPI's staff within the Office of Corporate Engagement (Introduction, Discussion, and Chapter 1: Literature Review). After soliciting requirements, we defined achievable goals and objectives for our project by coming together as a team, reviewing materials on S.M.A.R.T goals, and discussing what we wanted to accomplish (Chapter 4:

Recommendation, and Appendix A: Consultant's Report – Goals and Objectives). Subsequently, with the help of our project advisor we identified, utilized, properly cited information, and integrated information from multiple sources to address our project goals. We identified the appropriate resources to review, by interviewing our project advisor and by researching various items on the fly as our project progressed (Chapter 1: Literature Review and Appendix D: References). After our initial research, we began the process used to create and then finalize the recommended approach for soliciting startup and entrepreneurial firms (Chapter 4: Recommendation and Appendix A: Consultant's Report). We then analyzed and synthesized the results from our methodology using a technical and social perspective and presented our findings to the Vice Provost of Innovation and Entrepreneurship and the Office of Corporate Engagement (Findings, Chapter 4: Recommendations, and Appendix A: Consultant's Report, Chapter 2: Methodology – Meeting with MassChallenge, Chapter 2: Methodology – Communication with Semaphores and Rifiniti, and Chapter 2: Methodology – Office of Corporate Engagement).

Appendixes

Appendix A: Consultant's Report

Introduction

The purpose of this study, commissioned by Worcester Polytechnic Institute's Collaborative for Entrepreneurship & Innovation, is to review and audit the current MQP recruitment and solicitation process. This consultant's report recommends one primary and three alternative methods that adapt WPI's recruitment process to startup companies and entrepreneurial firms.

Addressees: Mark Rice, Vice Provost of Innovation and Entrepreneurship

Sharon Deffely, Director of the Office of Corporate Engagement

Implementer: Office of Corporate Engagement

Recommended Startup Accelerator: MassChallenge

Goals and Objectives:

Currently, students at Worcester Polytechnic Institute (WPI) have no formal process for completing their Major Qualifying Projects (MQPs) with stable startup companies and entrepreneurial firms. In its current state, the creation of such projects is highly dependent on a single professor having a preexisting relationship with the company. Our primary goal is to make a system in which startup company sponsored MQPs can be created without relying on a single person. This goal can be broken down into four main objectives: 1) find a source of startup companies and entrepreneurial firms, 2) setup a system for receiving the companies at WPI, 3) setup a system where students can be notified of the existing MQPs, and 4) setup a system where professors can be found to act as advisors for the projects. With our goal and objectives in mind, we recommend the following steps to achieve this desired result.

Recommended Course of Action:

Step One: Setup an official departmental initiative to source MQPs from startup companies

Action: Have the Vice Provost of Innovation and Entrepreneurship meet with the Director of the Office of Corporate Engagement to create an official initiative for recruiting MQPs from entrepreneurial firms and stable startup companies.

Step Two: External Communication

Part A: Communicate with and source potential MQPs from startup accelerators

Action: Select a campus representative that is responsible for 1) holding information sessions at the startup accelerator's office and 2) researching and contacting startup accelerators. Contact the webmaster(s) of the selected startup incubators to post MQP related advertisements on their website.

Part B: Decide if companies are eligible to sponsor an MQP

Action: Using the criteria defined below, decide whether the startup or entrepreneurial firm is eligible to sponsor an MQP. Please review the company's: 1) Financial stability and business structure; 2) Compliance with the general MQP standards; 3) Capacity to provide a Project Liaison to guide the students and faculty advisor on the project; 4) Ability to offer direct financial support to WPI; and 5) Ability to provide work space (if needed).

Step Three: Internal Communication

Part A: Mass email students and advisors with available MQPs.

Action: Appoint someone within the Office of Corporate Engagement that would be responsible for sending out emails to the corresponding student groups and advisors. This person would also follow up when students and advisors respond to express interest in an MQP.

Part B: Teach students how to find MQP advisors

Actions: 1) Have students do background research on startup sponsors and learn liabilities for project failure. 2) The Office of Corporate Engagement should set up information sessions to instruct students how to find "unconventional" MQP advisors for startup sponsored projects.

Step Four: Pilot an "Untraditional" MQP Fair in unison with the School of Business and the Coleman Fellows

Actions: 1) Contact all of the relevant parties from the Coleman Fellows. 1a) Garner their commitment to attend and speak at the event; 1b) Make sure they prepare pitches for their MQPs or discuss the benefits of participating in a new "untraditional" MQP. 2) Reserve space in the Campus Center's Odeum. 3) Electronically advertise the event to the majors relevant to the available MQPs.

Justification of Recommendation:

Step One: Setup an official departmental initiative to source MQPs from startup companies and entrepreneurial firms

Purpose:

To appoint a designated department to form MQPs by uniting companies, advisors, and students.

Action:

Have the Vice Provost of Innovation and Entrepreneurship meet with the Director of the Office of Corporate Engagement to create an official initiative for recruiting MQPs from entrepreneurial firms and stable startup companies.

Background:

The Office of Corporate Engagement is a department at WPI that focuses on handling relations between WPI and outside companies. As of now, they work with a small group of company sponsored MQPs, by organizing the process and handling the paperwork associated with having a company sponsor a project. In addition to this information, we were told by the Office of Corporate Engagement that they were looking for ways to expand their MQP recruitment process. Due to of the nature of their department and their desire to be expand, we found the Office of Corporate Engagement to be the best department at WPI for our project.

Since our recommended enhancements to MQP process would involve a lot of new and expanded responsibilities at WPI, we decided that one office would have to take charge and act as the official department for startup and entrepreneurial firm sponsored MQPs. One of the current problems that we are removing from our proposed process is the lack of structure. In order to mitigate this problem, it necessary to have one group keep things organized.

Requirements:

The Office of Corporate Engagement should communicate with startup accelerators, like MassChallenge, in order to solicit companies who would potentially sponsor an MQP. This office would also be responsible for contacting students and potential advisors about available opportunities. If a student replies to the office about a project that does not have an advisor, the office should advise the student about how to go about obtaining an advisor. We also recommend this office to oversee the entire MQP recruitment process.

Step Two: External Communication with Startup Accelerators

Part A: Communicate with and source potential MQPs from startup accelerators.

Purpose:

To market MQP sponsorship opportunities and attract startup companies as MQP sponsors.

First Action:

Select a campus representative that is responsible for 1) holding information sessions at the startup accelerator's office and 2) researching and contacting startup accelerators.

Second Action:

Contact the webmaster(s) of the selected startup incubators to post MQP related advertisements on their website.

Communication Strategy 1: Campus Representative and Office Hours

Background:

In order to expand WPI's presence and to attract a greater range of startup companies, a reliable marketing and communication plan is needed. Holding an information session at the startup accelerators' office is the most direct and sincere way to represent WPI and broadcast MQP opportunities. These seminars will allow WPI and the prospective sponsors to talk face-to-face and have in-depth, personalized Q&A and communication. A team of two representatives would be ideal: one WPI faculty member partnered with a student representative, CDC staff, or Office of Corporate Engagement staff. The frequency of this marketing activity has not been determined due to the uncertainty of the capacities and schedule allowances for startup accelerators.

However, we recommend the office hours to be held more frequently prior to the MQP application season (during the summer and A term). Additionally, the Office of Corporate Engagement would contact the startup accelerators' business relations team and arrange a visit to their office.

Details:

Location: Onsite Office Hours at the Startup Accelerator

Frequency: As needed

Representatives: To be selected or hired. Preferable a team of two, consisting of a WPI faculty member and a student/CDC staff/Office of Corporate Engagement staff.

Content: Presentations, Q&A sessions, and one-on-one consulting. The representatives would introduce WPI's MQPs and sponsorship opportunities.

- ♦ Introduction of application process.
- ♦ Success stories of sponsors and their projects.
- ♦ Student/ advisor stories.
- ♦ WPI Annual Fair (see step 7), Office hours, and other outreach event updates.
- ♦ Hand-outs, brochures, WPI merchandise.

Communication Strategy 2: Monthly posts on selected startup incubators' websites

Background:

Online advertisements and blog postings are among the most effective and economic marketing strategies. We recommend the Office of Corporate Engagement to target the incubators' websites because they are capable of spreading the word to innovative, sustainable, and trustworthy startup companies. The frequency of the posts is set to be at least two posts per month, with more frequent posts as needed. In order to post on incubators' websites, the Office of Corporate Engagement would need to contact the webmasters at the incubators and negotiate their advertising rate if applicable.

Details:

Location: Online

Frequency: twice a month or more frequent as needed

Content: A combination of text, image and video.

- ♦ Introduction of WPI MQP and sponsorship opportunity.
- ♦ Introduction of application process.
- ♦ Stories of current sponsors and their project results.
- ♦ Student/ advisor stories.

Part B: Decide if companies are eligible to sponsor MQPs

Purpose:

To ensure that all startup and entrepreneurial firm sponsored MQPs are of high quality and that their projects meet all WPI guidelines.

Action:

Using the criteria defined in the section below; decide whether the startup or entrepreneurial firm is eligible to sponsor an MQP.

Background:

Once all of the necessary paper work has been completed, we recommend the Office of Corporate Engagement to decide whether the startup or entrepreneurial firm is eligible to sponsor an MQP. The Office of Corporate Engagement, most importantly, needs to assess if a startup company is stable enough to host a three-term MQP (21 academic weeks in total). Through our research, we found various measurements to examine the stability of a new venture. The critical methods used to measure the stability of startups and entrepreneurial firms are in the following list. The criteria used to decide whether the company is eligible should assess the company's:

- ♦ Financial stability and business structure. The company needs:
 - To have been established for at least two years, preferably over four years.

- At least six employees and must have the following executive positions: CEO, VP of Marketing and COO.
- A good credit history and insurance coverage.
- To be able to provide any historical data, for example: financial statements and profit performance analyses, from the date founded.
- ◆ Compliance with the general MQP standards.
 - Project activities must encompass research, development and application.
 - Projects must involve analysis or synthesis, be experimental or theoretical, and emphasize a particular concentration in the major or combine aspects of several subareas.
 - Projects must be in the students' major area of study
- ◆ Capacity to provide a Project Liaison to guide the students and faculty advisor on the project.
- ◆ Ability to offer direct financial support to WPI
 - For all cost incurred (mailing, copying, information searches, local travel, supplies, or any other expenses authorized by the sponsor to conduct the project) through a reimbursement process administered by WPI.
 - For the payment of a WPI Project Fee, to be negotiated by the Faculty Advisor and/or Projects Office with the sponsor's Logistics Liaison.
- ◆ Work space (if needed) for the students - where they can establish files and have access to a telephone, clerical support, and a personal computer (if needed).

Step Three: Internal Communication within WPI Community

Part A: Mass email students and advisors with the available MQPs

Purpose:

To notify students of the available startup company sponsored MQP opportunities.

Action:

Appoint someone within the Office of Corporate Engagement that would be responsible for sending out emails to the corresponding student groups and advisors. This person would also follow up when students and advisors respond to express interest in an MQP.

Background:

When potential MQPs are sourced from a startup accelerator, students and faculty members still have to be found before proceeding to the next steps. In order to find students, we recommend the Office of Corporate Engagement to utilize the preexisting mass emailing system setup at WPI. More specifically, we recommend them to use the department specific email aliases, so students who have the major necessary to do the MQP get emailed about it. A similar, but different approach should be used to email advisors. Since the professors have their own areas of interest and expertise, the Office of Corporate Engagement would also be responsible for having someone look into the Professors' bios and pick out a few that seem like good candidates to advise a certain MQP. This would hopefully encourage professors to respond to these types of emails in the future – if a large portion of them contains interesting and relevant information.

The Student Email Template and Professor Email Template, in Appendix C, only need information about the MQP plugged into predefined spots. Then the Office of Corporate Engagement can choose to send them to the appropriate people. The Exhibit A form also in Appendix B can be filled out by the startup company and emailed to the professors who want more detailed information about the MQP.

Part B: Teach students how to find MQP advisors

Purpose:

To decrease the amount of work necessary, on the part of the Office of Corporate Engagement, to find MQP advisors.

Actions:

1) Have students do background research on startup sponsors and learn liabilities for project failure. 2) The Office of Corporate Engagement should set up information sessions to instruct students how to find "unconventional" MQP advisors for startup sponsored projects.

Background:

In the MQP recruitment process, potential MQPs need students who then a faculty member to serve as a project advisor. Due to the nature of startup and entrepreneurial firm sponsored projects, students need to consider

professor's research interest and also their willingness to undertake the risk of a project failing. Unlike large corporations, startup companies are generally in a small scale and still at a growing phase, which have a higher probability to yield incomplete project results.

Students are also required to find an MQP advisor that's in their major field of study. We also recommend students to look for an advisor with a strong interest in innovation and entrepreneurship. Students could look within the Tech Advisors Network –which consists of WPI alumni, faculty, and people experienced in new venture development – in addition to the Coleman Fellows to potential advisors.

Information on Project advisors and codes

see: <http://www.wpi.edu/academics/ugradstudies/advisorcode.html> (Project Advisors and Codes, 2014)

Step Four: Pilot an "Untraditional" MQP Fair in unison with the School of Business and the Coleman Fellows

Purpose:

- 1) To directly attract the attention of students across multiple disciplines.
- 2) To educate students on the available "untraditional" MQP opportunities.
- 3) To discuss benefits of doing untraditional MQPs with entrepreneurial firms and startup companies.
- 4) To garner student commitment.

Actions:

- 1) Contact all of the relevant parties from the Coleman Fellows.
 - 1a) Garner their commitment to attend and speak at the event.
 - 1b) Make sure they prepare pitches for their MQPs or discuss the benefits of participating in a new "untraditional" MQP.
- 2) Reserve space in the Campus Center's Odeum.
- 3) Electronically advertise the event to the majors relevant to the available MQPs.

Background:

Emails and other forms of electronic networking can be very impersonal, which can lead to a lowered participation rate among the desired parties. Holding an event on the WPI campus and inviting all parties, adds personality to the process. Attention will be drawn from all parties, even from the people who choose not to

attend. A large event like this allows students, advisors, and companies to almost 'put a face to the name'. Students will remember the concreteness of this event during any future electronic communications, hence increasing the conversion rate of electronic MQP advertisements. We've also recommended a timetable for such an event. After comparing the calendars of both our recommended startup accelerator, MassChallenge, and WPI we found the second week of September to be an ideal time for such an event. This date falls close to the middle of the four-month accelerator program of MassChallenge, and it is also the third week of A term for WPI students. Since students have recently come back to WPI, they should be more energetic than they would near the end of the year, and excited to take part in large events. This is also an ideal time for the startups hosted at MassChallenge, because this event would be scheduled during the middle of the accelerator's competition – the companies will neither be struggling to move in, nor bearing down in anticipation of the finals.

The host/sponsor and location of an MQP fair was the next point we considered. We decided that the Office of Corporate Engagement should work with the School of Business and the Coleman Fellows to pilot an "untraditional" MQP Fair. Considering that the professors within the Coleman fellows would most likely advise the untraditional MQPs, we recommend them to host and facilitate the MQP Fair. The location would ideally be in the Campus Center's Odeum.

The last piece we considered was the attraction of all relevant parties. Startup accelerators can be reached through the Office of Corporate Engagement and the Coleman Fellows, and since they would typically have a close relation with the startups and entrepreneurial firms. The students can be reached with email notifications as well as posters around campus. Prospective MQP advisors can be reached through the Coleman Fellows.

Alternatives:

In addition to our primary recommendation, we've provided three alternative recommendations for the Vice Provost of Innovation and Entrepreneurship and the Director of the Office of Corporate Engagement to consider. Since WPI is a silver partner to MassChallenge and pays a sponsor fee annually to maintain this relationship, the following section explores other uses for these funds.

Alternative 1: Form an MQP-partnership with a startup incubator.

Instead of paying 25K a year to sponsor MassChallenge, we recommend WPI to offer a retainer fee in exchange for recruiting startup companies (that meet the requirements) for MQPs. The money for the retainer fee would be the same money originally used to pay sponsorship fees to startup incubators. Since the main objective of the partnership is to recruit project sponsors, this exclusive MQP-partnership will improve the current recruitment process in terms of efficiency and performance.

Alternative 2: Invest in a registration website for sponsors.

After studying the sponsorship programs at other universities', we believe that a sponsor registration website would greatly improve the MQP recruitment process and decrease the labor, maintenance, and time costs involved. The website would have the information and guidelines for becoming a project sponsor and companies would be able to register online. Due to the lowered cost associated with travel, labor and time, a large number of companies would be interested in sponsoring projects in WPI. Investing in a sponsor registration website will reduce the cost incurred during the MQP creation process in the long run.

Alternative 3: Sponsor outstanding MQPs to be startups.

There are a lot of outstanding MQPs that could easily turn into real startup businesses. Instead of sponsoring startup incubators, we alternatively recommend WPI to help create startup ventures from their own in-house MQPs. By sponsoring the projects with entrepreneurial drive and potential, students will gain hands-on experience and engage in the real world to achieve big success, which reflects the WPI slogan: "Think big. Plan big. Succeed." Additionally, WPI can sponsor MQPs to help the previous years' MQPs that became startup businesses.

Appendix B: Exhibit A - D Forms

Exhibit A Form: MQP Project Proposal Form

Exhibit A MQP Project Proposal Form Sponsored Projects

Sponsor Name		Faculty Advisor	
Sponsor Liaison		Department	
Address		Phone	
Phone		Email	
Email			
Total Project Fee:	Project Fee: Est. Materials: Est. Travel:		

Project Title:

Description of proposed project:

DESIRED START (Please indicate 1 section for this project):

☐ LATE AUGUST (start of the academic year)

☐ MID-OCTOBER

☐ MID-JANUARY (start of spring term)

☐ MID-MAY (start of summer term)

Date submitted: _____

Anticipated Completion Date: _____

Signed:

Sponsor Liaison

WPI Faculty Advisor

Exhibit B

Student Project Budget/Financial Commitment

Sponsor Name:

Sponsor Liaison:

Faculty Advisor:

Project Title:

Project Fee: (Dollars U.S.)

Material Fee: (Dollars U.S.)

Travel Fee: (Dollars U.S.)

Other: (Dollars U.S.)

Students assigned:

Exhibit C

Student Agreement and Release

Name of Student: _____

Faculty Advisor: _____

Company Sponsor: _____

Project Title: _____

Term: _____

I, _____ agree to participate in this project for academic credit at the facility and/or under the sponsorship of _____ (SPONSOR). In consideration of the opportunity to work on the above mentioned project for said academic credit, I hereby acknowledge and agree that:

1. I am familiar with and agree to work within the contractual agreement on projects between SPONSOR and WPI, dated _____ (Sponsored Student Project Agreement);
2. Work will be performed by me as a registered student at WPI for academic purposes and not as an employee of SPONSOR for compensation;
3. Reports on the results of my studies will be made available to SPONSOR and WPI;
4. I understand that my rights to any intellectual property that may arise from my work on this sponsored project are governed by the Sponsored Student Project Agreement and may be contrary to WPI's Intellectual Property Policy. I have been informed of the intellectual property terms between WPI and SPONSOR for this project;
5. Ownership rights to any inventions, discoveries, know-how or products produced or developed while working on the project shall be governed by the Sponsored Student Project Agreement; and
6. I will abide by the rules and regulations in force and effect at SPONSOR's facility during my presence there.

I hereby release and agree to hold harmless SPONSOR its officers, agents, or servants, from any and all liability for personal injuries to me or damage to or loss of any of my personal property suffered in connection with the performance of said project work unless such injuries, damage, or loss are due solely to negligence on the part of SPONSOR or its employees.

Signed this _____ day of _____, 20_____.

Name (Print): _____

Address: _____

Signature: _____

Exhibit D

Faculty Agreement and Release

Faculty Name: _____

Company Sponsor: _____

Project Title: _____

Term: _____

I, _____ of the _____ Department at Worcester Polytechnic Institute (WPI) understand _____ (SPONSOR) has granted permission for WPI students to work on a project at their facility and/or under their sponsorship. In acknowledgement of good and reasonable consideration, I agree to serve as the Faculty Advisor of this project and hereby agree that:

1. I am familiar with and agree to work within the contractual agreement on projects between SPONSOR and WPI, dated _____ (Sponsored Student Project Agreement);
2. I have been provided with a copy of the current WPI's Intellectual Property Policy and have read and understood the terms and conditions of the policy. Recognizing also that these terms may not be entirely applicable in every situation and that the Intellectual Property terms of this project, where different from the WPI general IP policy, are governed specifically by the Sponsored Student Project Agreement;
3. Ownership rights to any inventions, discoveries, know-how or products produced or developed on this project shall be governed by WPI's Intellectual Property Policy, unless otherwise stated in the Sponsored Student Project Agreement;
4. I will abide by the rules and regulations in force and effect at SPONSOR's facility during my presence there;

I hereby release and agree to hold harmless SPONSOR its officers, agents, or servants, from any and all liability for personal injuries to me or damage to or loss of any of my personal property suffered in connection with the performance of said project work unless such injuries, damage, or loss are due solely to negligence on the part of SPONSOR or its employees.

Signed this _____ day of _____, 20_____.

Printed Name: _____

Address: _____

Signature: _____

Sponsored Student Project Agreement

THIS AGREEMENT, effective as of the date set forth last below ("Effective Date") by and between _____ of _____, hereinafter referred to as "SPONSOR" and Worcester Polytechnic Institute, Worcester, MA, hereinafter referred to as "WPI"; and

WHEREAS WPI, a non-profit educational institution, supports the teaching of multidisciplinary design and the provision of “real-world” experiences needed in a technical curriculum to supplement classroom work. The objectives of WPI are to educate students in the multidisciplinary aspects of current problems in science and engineering with societal impact; to encourage enthusiasm in students for solving “real world” problems via meaningful sponsored projects; and to explore the application of new methodologies;

WHEREAS to meet the above objectives, WPI encourages students to augment and develop a proficiency in their field of study through various programs including participation in sponsored undergraduate projects—Major Qualifying Projects (“MQP”)—as part of their academic curriculum for which they receive academic credit; and

WHEREAS COMPANY is interested in sponsoring WPI student projects so as to meet the above objectives and making available certain resources in support of this WPI program.

NOW, THEREFORE, in consideration of the promises and obligations contained herein, the parties hereto do agree as follows:

1. SPONSORED PROJECT

1.1. **Purpose.** The general purpose of this Agreement is to memorialize the arrangement, rights and responsibilities of the parties in preparation for the students completing their MQP requirement at WPI (hereafter referred to as “Sponsored Project”) and to provide the students with an opportunity to enhance their education through practical experience. This experience will enable the students to develop practical skills within their field of study, to consider their professional role, and to become familiar with the responsibilities, ethics and social values that accompany that role. Ideally, the Sponsored Project should allow the students to reflect upon:

- (i) becoming a professional in their field of study;
- (ii) the transition from learning in the classroom to applying learned skills in real world setting;
- (iii) the importance of practical skills and good mentorship; and
- (iv) the development of self-assessment skills.

MQPs are an academic endeavor equivalent to 9 credits. MQPs are a graduation requirement for all WPI students. Each MQP has a faculty advisor who meets with the students and assesses progress during the course of the project. Students will receive a grade for the project.

1.2. **Project Proposals.** The scope and objective of any proposed Sponsored Project shall be established by mutual agreement of the parties and will require the approval of both parties. A Project Proposal form outlining the scope and desired outcomes of each project shall be completed for each separate Sponsored Project. The Project Proposal form for this Sponsored Project is attached as **Exhibit A** and hereby incorporated in this Agreement.

1.3. WPI will identify the individual student(s) to be assigned to each approved project on Exhibit A and SPONSOR may, for reasonable cause, request the removal from a project of any individual student. Based on the student's academic curriculum and nature of WPI's Sponsored Project program, student(s) assigned to the Sponsored Project are viewed as academic interns in relation to SPONSOR and not as employees. Student(s) have been advised that under the MQP program they will earn academic credit, and not receive compensation from the Sponsor, for any of the work performed on their Sponsored Project. It is understood that all students assigned to the Sponsored Project shall be required to observe any and all local safety and operating regulations of the SPONSOR when working at SPONSOR's premises. SPONSOR will advise students of such regulations. It is further understood that WPI students engaged in the Sponsored Project will be required to execute a **Student Agreement and Release** form attached hereto as **Exhibit C**.

1.4. A WPI Faculty Advisor will be responsible for advising the students' efforts to carry out the Sponsored Project objectives. The faculty member is an advisor on this project and is under no specific obligation to directly participate in the completion of the project. The Faculty Advisor may contribute WPI background technology or know-how to assist the students when necessary for completion of the Sponsored Project. For this project, the Faculty Advisor is identified on Exhibit A. WPI Faculty working on this project will execute a **Faculty Agreement and Release** form which is attached hereto as **Exhibit D**.

1.5. SPONSOR agrees to appoint a liaison ("Liaison") to work with the WPI students and faculty advisor on each Sponsored Project. SPONSOR Liaison shall have the authority to represent SPONSOR and may provide technical consultation, guidance, equipment and materials, as needed to support the Sponsored Project. For this Sponsored Project, the SPONSOR Liaison is identified on Exhibit A. If Sponsored Project is to be completed on SPONSOR's premises, SPONSOR will provide free of charge, the necessary facilities, equipment, supplies, and administrative support to students.

1.6. In providing support to the WPI student MQP projects, SPONSOR has agreed to contribute the amounts set forth in **Exhibit B**, which is attached to this Agreement and made a part hereof ("Total Project Fee"). The Total Project Fee is intended to support the Faculty Advisor time on the Sponsored Project and the WPI MQP program objectives.

1.7. WPI warrants that the Sponsored Project Services and all related reports, documents, programs, ideas, disclosures, know-how, information software and work (collectively called the "Work Product") submitted, disclosed or delivered hereunder (i) are and shall be its original work (or Work Product for which WPI has obtained all necessary rights to use and provide to SPONSOR in accordance with the requirements of this Agreement); and (ii) do not and shall not violate any patent, copyright, trade secret or other proprietary or intellectual property right of any third party.

1.8. WPI agrees to carry such insurance as it may deem appropriate for property damage caused by WPI student(s) while on SPONSOR's premises, unless such damage shall be caused by the negligence of SPONSOR, its employees or agents. WPI will provide evidence of such insurance coverage if required by SPONSOR.

2. PROJECT REPORTS AND PUBLICATION

2.1. Project Reports and Results. The parties agree to make the project results available in WPI student reports which shall be submitted to WPI for academic credit and to the SPONSOR for review according to the provisions of Part 4. Following approval of the final project report, reports shall be available to the public via “e-project reports database” maintained by the WPI library.

2.2. Project Publications and Presentations. Where the results of a student project are of particular importance, such results may be published in the technical literature or presented at professional meetings. WPI shall submit any draft publications or presentations to the SPONSOR for review according to the provisions of Part 4.4 prior to any public disclosure.

3. CONFIDENTIALITY

3.1. “Confidential Information” shall mean any and all information or materials provided by one party to the other which are in tangible form and labeled “confidential” or the like, or, if disclosed orally, are identified as being confidential at the time of disclosure and are followed up within two (2) weeks in a tangible form that is appropriately labeled, or any other information, observed when at a facility of the other, that a reasonable business person would understand to be not publicly available, but shall not include information or materials that (i) were, on the Effective Date, generally known to the public; or (ii) become generally known to the public after the Effective Date other than as a result of the act or omission of the receiving party; or (iii) were rightfully known to the receiving party prior to that party receiving same from the disclosing party; or (iv) are or were disclosed by the disclosing party to a third party generally without restriction on disclosure; or (v) the receiving party lawfully received from a third party without that third party’s breach of agreement or obligation of trust; or (vi) are independently developed by the receiving party. The obligations of the receiving party with respect to Confidential Information disclosed to it under this Agreement will terminate five (5) years after the date of disclosure.

3.2. WPI shall protect SPONSOR’s Confidential Information by means of the same standard of care as used by WPI to protect its own information of a similar nature and importance, and no less than reasonable care. WPI shall use the Confidential Information only to fulfill its obligations or to exercise its rights hereunder with regards to the sponsored project and shall disclose Confidential Information only to those persons in its organization who have a need to know such in the performance of their duties in connection with this Agreement and shall promptly report to the disclosing party any actual or suspected breach of the terms hereof.

3.3. WPI shall not, and shall not authorize or assist another party to originate any written publicity, news release, or other public announcement, relating hereto, without the prior written approval of SPONSOR, which approval shall not be unreasonably withheld. If WPI’s written publicity, news release or other public announcement is an academic publication for academic or research purposes (Academic Work), it shall be treated as follows. The Academic Work must be so identified to the SPONSOR’s liaison and must not contain Confidential Information under this Agreement. After receiving the Academic Work, the SPONSOR’s liaison shall have 30 days in which to reply with comments, which shall be reasonably followed by WPI. If the SPONSOR’s liaison has not replied within the 30 days, the Academic Work may be published substantially as it was provided to SPONSOR. The terms of this Agreement, its Schedule(s) and Exhibits, but not their existence, are to be considered Confidential Information for purposes of BOTH SPONSOR and WPI.

3.4. SPONSOR is not permitted to state or imply in any publication or other published announcement that WPI has approved any product that is or might be manufactured, sold, or otherwise distributed. WPI also requires that its name not be used in connection with any advertisement, press release, or other form of business promotion or publicity, or refer to a research agreement, without its prior written approval.

4. INTELLECTUAL PROPERTY

4.1. With regard to Work Product that is first made, authored, conceived or reduced to practice by WPI, its agents, servants, representatives or employees in connection with this Agreement, but NOT based on SPONSOR's Confidential or proprietary information, WPI shall retain the entire right, title and interest in and to all patents, copyrights, mask work rights, trade secrets and other intellectual property rights therein. SPONSOR shall have non-exclusive royalty free paid up in full rights under any intellectual property rights associated with the Work Product; however, SPONSOR shall be given first rights of refusal of an exclusive license under the above-referenced intellectual property rights, wherein the exclusive license will be offered under most favored licensee provisions, and otherwise under commercially reasonable terms.

4.2. If the work product IS based on SPONSOR's Confidential or proprietary information, and authored, conceived or reduced to practice by WPI, its agents, servants, representatives, or employees in connection with this Agreement, then WPI grants to SPONSOR the entire right, title and interest in and to all patents, copyrights, mask work rights, trade secrets and other intellectual property rights therein. In such case, SPONSOR agrees to list students working on this project as inventors on any patent application filed. If any Work Product is not based on SPONSOR's Confidential information nor first made, authored, conceived, or reduced to practice under this Agreement as described above, then WPI Intellectual Property agreement shall govern.

4.3. With respect to JOINTLY created or authored Work Product that results in INVENTIONS, SPONSOR shall have the right to file patent applications at its own expense on such inventions which shall be considered jointly owned by WPI and SPONSOR. SPONSOR shall keep WPI reasonably informed as to the progress of such patent applications and shall take those actions necessary to record the assignment of WPI inventor's rights to WPI. Each party shall have the right to use its undivided interest in the invention without accounting to the other. WPI agrees that during the term of this agreement and for six months after termination it will not license its interest in the jointly owned invention to any third party and agrees upon request to enter into good faith negotiations to license its rights exclusively to SPONSOR. If SPONSOR elects in writing not to file patent applications on jointly owned inventions, WPI may do so at its own expense. WPI shall keep SPONSOR reasonably informed as to the progress of such patent applications and shall take those actions necessary to record the assignment of SPONSOR's inventor's rights to SPONSOR.

4.4. WPI reserves the right for publication and presentation. SPONSOR hereby acknowledges that, as an academic institution, WPI has an obligation to publish research results. SPONSOR hereby grants WPI the right to publish results generated by projects contemplated under this agreement, subject to reasonable review by SPONSOR as follows: WPI will provide a draft of publication/presentation for SPONSOR's review at least 30 days prior to release or presentation. The report for review shall be sent to SPONSOR's liaison identified in Exhibit A. Upon written request, WPI will remove any information identified as confidential or proprietary by SPONSOR. If SPONSOR does not make a written request for changes upon conclusion of the 30 day review period, the report shall be published/presented in its original form.

4.5. **Patentable Subject Matter.** In the event that any project reports, presentations or publications contain patentable subject matter or other valuable intellectual property, by mutual agreement of the parties, such materials may be withheld from public disclosure until the material is adequately protected by filing of patents or registering copyrights or trademarks.

4.6. In the event it becomes necessary for performance on the project for SPONSOR to disclose SPONSOR's proprietary and confidential information to WPI students, staff or faculty assigned to the project, it is understood that such WPI personnel may be required by SPONSOR to execute a non-disclosure agreement to protect SPONSOR's proprietary and confidential information. SPONSOR agrees to provide a copy of SPONSOR's non-disclosure agreement to WPI's Office of Corporate Engagement for review and approval prior to execution of the agreement by any WPI personnel.

5. EFFECTIVE DATE AND TERMINATION

5.1. This agreement will become operable on the Effective Date and will continue for the term (s) specified in the Project Proposal attached as Exhibit A until the end of the academic term in which the project is completed unless terminated by either Party by giving thirty (30) days' notice in writing to the other Party. WPI will provide SPONSOR with written notification of the completion of the project. In the event of termination, the provisions of Parts 3, 4 and 7 shall survive and the financial commitment specified in Exhibit B attached hereto shall be adjusted to reflect the work completed as of the date of termination.

5.2. The provisions of this Agreement may be amended by mutual written agreement of SPONSOR and WPI, as circumstances require, to meet the needs of a specific project.

5.3. At the termination of the project covered by this Agreement, either by conclusion of the project research and delivery of the project report or by termination by either WPI or the SPONSOR, WPI shall return, and, at SPONSOR's request, certify that WPI no longer has possession of any SPONSOR materials, documents or property.

5.4. Any claim for payment must be made within thirty (30) days from the date of cancellation or early termination of this Agreement.

6. INVOICING AND PAYMENT

6.1. The Total Project Fee (which includes the Project Fee, Material Fee and Travel Expenses as outlined in Exhibit B) for the Sponsored Project as described in Exhibit A shall be:

\$_____ (_____ Dollars U.S.)

6.2. The Total Project Fee is payable according to the following payment schedule:

1/2 of the Total Project Fee (\$_____) due upon beginning of project or "effective date" of Sponsored Student Project Agreement; and

1/2 of the Total Project Fee (\$_____) due upon completion and delivery of project report to SPONSOR.

6.3. SPONSOR shall provide WPI with a Purchase Order Number for reference in WPI's invoicing. Invoices shall reference SPONSOR's Purchase Order No:_____.

6.4. If additional expenses are anticipated and outlined in Exhibit B, WPI shall submit invoices for reimbursable costs and expenses and be paid in the manner specified in the applicable payment Schedule.

6.5. SPONSOR's liability hereunder shall not exceed the full amount scheduled to be paid if WPI fully performs under this Agreement. SPONSOR shall not be responsible for any of WPI's costs or expenses except as expressly set forth in Exhibit B attached hereto. WPI shall be liable for payment of all applicable taxes and fees based on sponsored project services performed hereunder including, but not limited to, FICA and unemployment insurance if applicable.

Invoices shall be sent to:

Name:

Dept:

Company address:

Email:

7. LIMITATIONS OF LIABILITY

EXCEPT FOR CLAIMS ARISING OUT OF A PARTY'S BREACH OF ITS OBLIGATIONS UNDER SECTION 3.0 OR 4.0, NEITHER SHALL HAVE LIABILITY TO THE OTHER FOR ANY SPECIAL, CONSEQUENTIAL, EXEMPLARY, INCIDENTAL OR INDIRECT DAMAGES (INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, REVENUES, DATA AND/OR USE) ARISING OUT OF OR IN CONNECTION HERewith OR THE PERFORMANCE OF A SCHEDULE, EVEN IF ADVISED OF THE POSSIBILITY THEREOF. NEITHER PARTY SHALL BRING ANY CLAIM ARISING HEREUNDER MORE THAN EIGHTEEN (18) MONTHS AFTER SUCH CLAIM ACCRUES.

8. GENERAL PROVISIONS

8.1. **Entire Agreement and Amendment.** The terms contained herein constitute the entire agreement between the parties with respect to the subject matter hereof and shall supersede all prior communications and agreements, either oral or written. Each party warrants that it has the right to enter into this Agreement and fulfill its obligations thereunder, and has no knowledge of any claims adverse to such rights. Both parties reject any and all pre-printed terms and conditions contained on any purchase order or other ordering document which are part of a general form and were not specifically negotiated by the parties. The provisions of this Agreement, including any Project Proposal, may be amended by mutual written agreement of SPONSOR and WPI, as circumstances require, to meet the needs of a specific project. No amendment or modification hereof shall be valid or binding upon the parties unless made in writing and signed by the respective representative of each party.

8.2. Each party shall act only as an independent contractor and not as an employee, agent, servant, or representative of the other. Neither party shall have any authority to transact business or make any commitments on behalf of the other unless expressly authorized in writing by an officer of the other. Nothing contained herein shall be construed as preventing either party from developing, acquiring, marketing, selling, supporting or maintaining products or services similar to or competitive with products of the other, or from entering into agreements with others, provided that in so doing, there is no breach of the terms of this Agreement. Neither this Agreement nor any part hereof may be assigned or subcontracted by WPI, in whole or in part, without the prior written consent of SPONSOR.

8.3. **ITAR.** Each party shall comply with all applicable export laws, orders and regulations and obtain all necessary governmental permits, licenses and clearances required for the performance of the work under this Agreement. SPONSOR certifies that the subject matter of this project is not subject to International Traffic in Arms (ITAR) regulations relating to the import/export of defense related products or services.

8.4. **Surviving Provisions and Waiver.** Any provision of this Agreement that by its very nature or context is intended to survive any termination, cancellation or expiration hereof, including but not limited to provisions concerning payment of outstanding amounts, disclosure of information, indemnities and limitations of liabilities, shall so survive. The waiver of any breach or default under this Agreement shall not constitute a waiver of (i) any other right or remedy hereunder; or (ii) any subsequent breach or default.

8.5. **Partial Invalidity.** If in any instance any provision of this Agreement shall be determined to be illegal, invalid or unenforceable under any applicable law, such shall be deemed separable from, and shall in no way affect or impair the validity or enforceability of, the remaining provisions of this Agreement. The remaining

provisions of this Agreement shall be given effect in accordance with their terms unless the purposes of the Agreement can no longer be preserved by doing so.

8.6. Governing Law. This Agreement shall be governed by the laws of the Commonwealth of Massachusetts, excluding its conflict of law rules.

8.7. Force Majeure. Neither party shall be liable for any delays or failures in performance due to circumstances beyond its control.

8.8. Headings. Headings are inserted for the convenience of the parties and shall not be interpreted to modify any provision of this Agreement.

8.9. Notices. Notices required or permitted under this Agreement shall be signed by an authorized representative of the sender, sent to the respective individuals identified below (which may be changed by written notice to the other), and shall be deemed to have been received (i) when hand delivered thereto by a representative of the sender; or (ii) three (3) days after having been sent thereto postage prepaid, by registered or certified first class mail, return receipt requested; or (iii) when sent by electronic means, with written confirmation by the method of transmission; or (iv) one (1) day after deposit with an overnight carrier, with written verification of delivery.

SPONSOR	Worcester Polytechnic Institute
	Stephen Flavin, Vice President Academic and Corporate Development Worcester Polytechnic Institute 100 Institute Road Worcester, MA 01609

8.10. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original, and all of which together shall constitute one and the same agreement. Each party acknowledges that an original signature or a copy thereof transmitted by facsimile or by PDF shall constitute an original signature for purposes of this Agreement.

IN WITNESS WHEREOF, each of the parties hereto has caused this agreement to be executed in duplicate originals by its duly authorized officers or representatives.

SPONSOR	WORCESTER POLYTECHNIC INSTITUTE
By _____	By _____
Name _____	Name _____
Title _____	Title _____
Date _____	Date _____

Appendix C: Templates

Student Email Template

Subject Line: MQP Opportunity with [Company Name]

Hi [Major] Majors:

Are you still searching for a unique and rewarding MQP that will look great on your resume? [Company Name] is a new and innovative [Type of Company] startup company that will be hosting an MQP next year for students majoring in [Major]. For this MQP, you would be [Description of MQP].

If you are interested, please reply to this email and we will arrange a meeting to talk about the details of this project.

Office of Corporate Engagement

[Other Signature Information]

Professor Email Template

Professor XXX

[Title]

[School Name]

[Street Address]

[City, State, ZIP Code]

Subject Line: MQP Opportunity with new [Type of company] Startup Company

Dear Professor XXX:

[Company], a [type of company] startup company is [Description of what company does]. They are sponsoring an MQP with the hope of [Description of MQP goal].

We feel as though [brief project description] project would be the best fit for you. The project information (Exhibit A form) is attached in this email for your convenience. We would like you to consider being an advisor for this proposed MQP as we think this would be a great opportunity for WPI students. Please don't hesitate to contact us should you have any questions about this project or if you want to learn more about the MQP process for working with a startup company.

Thank you for your consideration. We look forward to hearing from you within the next couple of days, so we can keep this process moving along.

Sincerely,

Office of Corporate Engagement

[other signature information]

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